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All India Association of Industries

7th **GES** | GLOBAL ECONOMIC SUMMIT

GLOBAL VALUE CHAINS: Accelerating MSME

Growth, Development and Sustainability

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22-24 February, 2018 | World Trade Centre Mumbai, India

SUMMIT HANDBOOK



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(15 September, 1860 - 14 April, 1962)

MVIRDC World Trade Centre Mumbai is the realisation of the vision of Sir M. Visvesvaraya. MVIRDC is the promoter of World Trade Centre Mumbai. MVIRDC WTC programmes are conducted to guide MSMEs with reliable information for business planning. Various research-based seminars, workshops and training programmes are conducted to sensitise MSME entrepreneurs on various aspects of trade and business and sharpen their skills. Thus, the objective of MVIRDC research is to enhance MSME competitiveness and promote their integration into global markets.



MVIRDC

M. Visvesvaraya Industrial Research and Development Centre

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MVIRDC, having spearheaded the movement of World Trade Centres in India with the establishment of WTCs at Bhubaneswar, Goa and Jaipur, is assisting MSMEs in these regions through Trade Research and Knowledge Programmes.



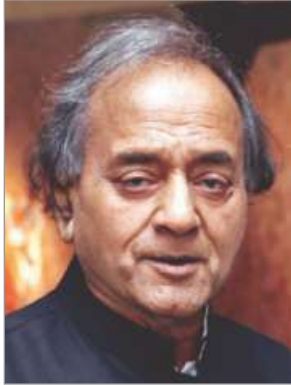
GLOBAL VALUE CHAINS: Accelerating MSME Growth, Development and Sustainability

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A Research Initiative by MVIRDC World Trade Centre Mumbai

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Foreword

From paperboard to motherboard, fragmentation of production process across national borders has become a dominant business strategy for companies. Globalisation in the early 20th Century was marked by exports, imports and foreign investment. However, the defining feature of globalization in the latter half of the 20th Century is the fragmentation of value chain across national borders. Today, goods and services are no longer produced entirely within national borders as various intermediate components and input services are sourced from foreign countries.

The entire supply chain ranging from design, manufacturing, final assembly, marketing, distribution and after sales services is scattered across various countries depending on their comparative advantages. Such a geographic distribution of supply chain based on a nation's comparative advantage generates greater value for customers in terms of reduced price and superior quality.

This process of outsourcing various stages of the value chain offers tremendous business opportunity for micro, small and medium enterprises (MSMEs), especially in the developing and least developed countries. MSMEs tend to benefit from training, transfer of technology, and long term business relationship with multinational companies in the Global Value Chains (GVCs).

The future growth of MSMEs lies in making them strategic partners to multinational companies, who are lead firms in the value chain. According to the International Council for Small Business (ICSB), Micro, Small and Medium-sized Enterprises (MSMEs) account for more than 90% of all firms, employ 60-70% of labour force and contribute 50% to GDP globally.

Therefore, developing a sustainable symbiotic relationship between MSMEs and lead firms will result in inclusive economic growth. GVCs can be an effective tool to implement sustainable development goals such as responsible production and consumption, and industry, innovation and infrastructure.

Realising the significance of GVCs for sustainable economic progress, policymakers in some countries are giving unprecedented policy thrust to this aspect of development. For instance, the Ministry of Foreign Affairs in Chile has set up a separate division for GVCs at the General Directorate for International Economic Relations.

In fact, some countries are planning to incorporate relevant provisions to promote GVCs in their Free Trade Agreements (FTAs) with other countries. These FTAs with provisions on GVCs are popularly called as deep FTAs. Considering the significance of GVCs for business strategy and policy making, this Handbook is a timely initiative by MVIRDC World Trade Centre Mumbai and All India Association of Industries to encourage MSME integration into GVCs.

We hope this Handbook adds value to the existing literature on GVCs.

Kamal Morarka

Chairman

MVIRDC World Trade Centre Mumbai



Preface

International trade patterns are evolving over the years. From the erstwhile significance of trade in finished goods, today many industries and countries have initiated trade in intermediate goods, where value addition takes place at every stage of the production process or service. This has resulted in a more diversified and integrated global trading platform wherein businesses specialise in their core competencies and reach out to trading partners through their backward and forward linkages.

Large firms play a leading role in integrating MSMEs with Global Value Chains (GVCs). While developed countries tend to reap greater benefits from GVCs due to their highly-skilled labour adding immense value to the production and supply chains through research and development, and post-production activities, developing countries gain from increased access to newer technologies by associating with GVCs. Developing countries also gain from integration with GVCs as their MSMEs get access to a larger market, without facing the deterrence of manufacturing the finished goods themselves.

GVCs are also important to address SDGs such as Quality Education, Gender Equality, Decent Work and Economic Growth, and Reduced Inequalities.

To encourage the participation of MSMEs in GVCs, MVIRDC World Trade Centre Mumbai and All India Association of Industries have organised the 7th edition of their flagship event 'Global Economic Summit' on 'Global Value Chains: Accelerating MSME Growth, Development and Sustainability' from February 22-24, 2018.

This Handbook is a key feature of the event as it incorporates views from various multilateral organisations, policymakers, corporate professionals, non-government organisations and academicians to promote GVCs. The Handbook throws light on important aspects of GVCs such as how MSMEs can fit into Value Chains, Prioritising India's Value Chain Strategy for Inclusive Growth, Driving Positive Change at Scale, Changing Dynamics in an Automated World etc. to help readers familiarise with the key issues surrounding GVCs.

We thank experts from the World Trade Organisation, International Centre for Trade and Sustainable Development, World Bank Group, Economic Commission for Latin America and the Caribbean, Indian Institute of Foreign Trade, among others for shedding light on the role and importance of GVCs in multilateral trade.

Vijay G. Kalantri

President, All India Association of Industries (AIAI)
Vice Chairman, MVIRDC World Trade Centre Mumbai
Director, World Trade Centers Association Board, New York

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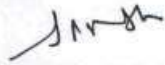
MESSAGE

I am pleased to know that the All India Association of Industries and the World Trade Centre Mumbai are organizing the 7th Global Economic Summit from 22nd to 24th February, 2018 in Mumbai. The theme of the Summit – “Global Value Chains : Accelerating SME Growth and Development” rightfully captures the growing importance of MSMEs in building a robust global economy.

Global Value Chains (GVCs) have become an integral part of global trade. The global trade community needs to respond proactively to the requirements and priorities of developing nations, as also it is important that the GVCs should provide developing nations a ‘level playing field’. The successful integration of MSMEs into GVCs will need a comprehensive roadmap, access to advanced technologies and successful quality management along with availability of timely and adequate finance.

India will play a major role in providing strength to the global economy with its large number of MSMEs. The MSME sector, including the service segment, is a key driver of India’s economic growth. It is the quintessence of promoting inclusive and sustainable economic growth, employment and decent work for all as well as industrialization and fostering innovation.

I convey my best wishes for the success of the Summit.


(SURESH PRABHU)

गिरिराज सिंह
GIRIRAJ SINGH



राज्य मंत्री (स्वतंत्र प्रभार)
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भारत सरकार
नई दिल्ली-110011
MINISTER OF STATE (I/C)
FOR
MICRO, SMALL & MEDIUM ENTERPRISES
GOVERNMENT OF INDIA
NEW DELHI-110011

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The 7th Global Economic Summit will discuss key issues such as Enabling Sustainable Development; Incremental use of Retail Chains in fostering Global Value Chains (GVCs); Infrastructure as the backbone of GVC growth; Role of Trade Promotion Organizations in promoting GVCs, Quality Management, Emerging Opportunities and Challenges in improving MSME competitiveness, etc.

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I am happy to inform you that the earlier editions of the GES had substantial foreign and Indian participation from across the globe and the interactive sessions resulted in creating effective business opportunities, while promoting innovation and cluster development.

I convey my best wishes for the success of the Summit and believe that the Summit will provide a global platform to discuss measures and strategies to enhance SME competitiveness through their integration in GVCs for economic growth and sustainable development.

(GIRIRAJ SINGH)

संतोष कुमार गंगवार
Santosh Kumar Gangwar



D.O. No. 4/16/MOS(IC)/VIP/2017
श्रम एवं रोजगार राज्य मंत्री (स्वतंत्र प्रभार)
भारत सरकार
Minister of State Labour & Employment
(Independent Charge)
Government of India

13/10/2017

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(Santosh Kumar Gangwar)



पोन्. राधाकृष्णन्
 பொன். இராதாகிருஷ்ணன்
Pon. Radhakrishnan



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**MINISTER OF STATE
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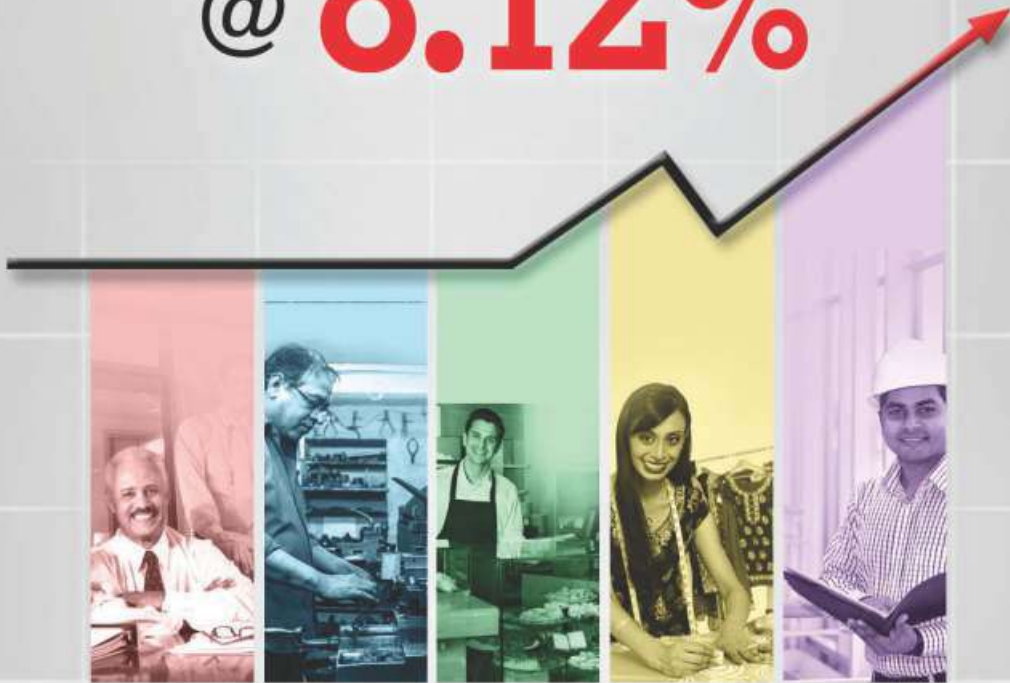
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Global Value Chains - The Indian Perspective

In an era of rising trade relationships, companies today are focusing on increasing their competitiveness and grabbing a share in the global market pie. Governments are also promoting those industries in which the country has a competitive advantage through trade promotion, duty drawback schemes and integrating markets through improved infrastructure and tax regimes.

Increasing standardization calls for an outlook where all the stages of production and distribution may not take place in one country itself. This particularly boosts MSME growth as they can be a part of the supply chain through their value addition. It also calls for improving the skills of the people so that they can enjoy a higher standard of living. Global Value Chains (GVCs) have the potential of increasing efficiency, attracting investments and fostering innovation.

Developing countries can gain from integration with GVCs as their MSMEs would get access to a larger market, without facing the deterrence of manufacturing the finished goods themselves. However, so far, apart from China, the share of developing countries in global value-added trade is low due to poor infrastructural and financing problems faced by their industries domestically, as also there being lack of standardization of quality.

The typical pattern of a GVC consists of a developed country contributing to high value-added activities such as research and design in the initial stages of the value chain; the low value-added activity of manufacturing such as assembling is then carried out by a developing country with cheap labour; finally again, the high value-added activities of marketing, distribution and after-sales services are carried out in developed countries which are consumers of the final products.

The developing countries gain from increased access to newer technologies; however, developed countries with highly-skilled labour tend to reap greater benefits from the process. Still, protectionist measures in the form of tariff and non-tariff barriers tend to make a developing country's imports of inputs costlier, thereby hampering the export-competitiveness of their intermediate value-adding industries that can be a part of the GVC and disrupting the GVC.

What is more required is skill development of the people to take up high value-added jobs, improving logistics infrastructure for smooth movement of goods within the economy and outside, promoting investor-friendly policies, rationalization of labour laws, as well as harmonization of standards for better integration in the GVCs.

Goods and Services Tax (GST) and GVCs

Today, about 160 countries across the globe have implemented GST / Value Added Tax (VAT) which has given their enterprises access to a unified market within their economies. GST / VAT has not only increased tax compliance, but also reduced logistics costs on transportation of goods from one part of the country to another. This has led to cost efficiency and integration of fragmented markets into one. Thus, MSMEs of these economies have reaped the benefits of increased market access, while also benefitting from lower tax liability due to the very nature of GST of implementing tax only on the value-addition component by availing input tax credits.

Advanced nations which have implemented GST for several years now have been able to pass over its benefits to consumers in the form of reduced prices and easier administration. This is one of the preconditions for integrating an economy and its MSMEs into the Global Value Chains (GVCs) as its prices of goods and services tend to become competitive in the international market. It can also be cited as one of the key reasons for a higher share of developed nations in global value-added trade.

Further, implementation of GST tends to bring the informal sector in the formal sector net as a good or service is taxed at every stage of production, thereby removing the cascading effect of taxes on some particular enterprises which then tend to escape taxes. Thus, with GST all the enterprises in a supply chain tend to get integrated which can then be easily integrated with the global chains with increased export-competitiveness.

Trade Statistics

Traditional statistical measures only incorporate bilateral trade data and not multilateral trade data. So if an item produced in India and exported to China for

assembling is finally consumed in the EU or US, it is only captured as trade between India and China and China and EU / US, not as between India and EU / US. The OECD - WTO Trade in Value-Added (TIVA) database and the World Input-Output Database are some attempts developed to estimate a country's value-added component in a GVC and identify the different stages of the chain across countries at which the value-addition takes place.

Table 1 shows Industry shares in Trade in Value Added (TIVA) from India to the World in the year 2011, the latest year for which data is available in the OECD TIVA database. The columns represent indicators, namely domestic value added in exports by each industry as a percentage of total gross exports by all industries (A), foreign value added in exports by each industry as a percentage of total gross exports by all industries (B), domestic value added embodied in gross exports of each industry as a percentage of total gross exports of that industry (C), foreign value added embodied in gross exports of each industry as a percentage of total gross exports of that industry (D), industry domestic value added content of gross exports by foreign countries as a percentage of total gross exports by India (E) (it is often considered as a measure of 'forward linkages' in analyses of GVCs), domestic value added in gross exports of final demand products by the industry as a percentage of total industry exports (F) and domestic value added in gross exports of intermediate products by the industry as a percentage of total industry exports (G) (it reveals the share of industry exports that consists of domestic value added destined for further production within direct partners' economies - either to meet the partners' final demand or to be embodied in exports by direct partners; it can be considered as a measure of forward linkages in GVCs).

Agriculture and mining activities in India have a low share in domestic and foreign value added by all industries, as also value addition is concentrated domestically, thereby suggesting that these industries are not GVCs in India. As against this, manufacturing has a high share in domestic and foreign value added of all industries as also in domestic value added in foreign exports as a share of total exports, suggesting backward and forward linkages in terms of a complex GVC.

The food products and beverages, and textile and leather industries have value addition concentrated domestically and most of it translates into export of

final goods. As against this, the chemicals and non-metallic mineral products industry is a complex GVC with a balanced share of domestic and foreign value addition and most of the domestic value addition resulting in export of intermediate goods.

Within this industry, the coke, refined petroleum products and nuclear fuel industries have a higher share of foreign value addition, whereas the chemicals and chemical products industry comprise more of domestic value addition. The rubber and plastic products, and other non-metallic mineral products industries are not significant GVCs in India.

The basic metals industry has a balanced share of both domestic and foreign value addition with most of the domestic value addition going into export of final goods. The fabricated metal products industry has a higher share of domestic value addition with a major share of it going into export of intermediate goods.

The machinery and equipment not elsewhere classified, and computer, electrical and optical equipment industries consist of a major share of domestic value addition and a balanced share of domestic value added in export of both, final and intermediate goods. As against this, the electrical machinery and apparatus not elsewhere classified industry has a higher share of domestic value addition resulting in export of intermediate goods.

The transport equipment industry has a higher share in terms of domestic value added and a balanced share of domestic value added in export of both final and intermediate goods.

Wholesale and retail trade, and transport and storage are significant GVCs in India. Wholesale and retail trade have value addition concentrated domestically contributing to a balanced share in export of final as well as intermediate goods. Hotels and restaurants do not form a GVC. Transport and storage have value addition concentrated domestically, but a higher share of domestic value addition in export of intermediate goods. Post and telecommunication, and financial intermediation do not form significant GVCs in India, as also real estate activities and renting of machinery and equipment.

Computer and related activities, and R&D and other business activities are parts of GVCs with value

Table 1: Trade in Value Added: India, Partner Country World, 2011

Indicator		Industry domestic value added contribution to gross exports by all industries (A)	Industry foreign value added contribution to gross exports by all industries (B)	Domestic value added share of gross exports of the industry (C)	Foreign value added share of gross exports of the industry (D)	Domestic value added of the industry embodied in foreign exports as share of total gross exports by India (E)	Domestic value added in exports of final products as a share of total industry exports (F)	Domestic value added in exports of intermediate products as a share of total industry exports (G)		
Industry		Percentage	Percentage	Percentage	Percentage	Percentage	Percentage	Percentage		
TOTAL		76.0	24.0	76.0	24.0	19.2	32.7	43.3		
Agriculture, hunting, forestry and fishing		2.0	0.1	95.9	4.1	0.3	39.2	56.7		
Mining and quarrying		1.3	0.1	92.1	7.9	0.5	3.7	88.4		
Total Manufactures		31.9	18.1	63.8	36.2	13.5	28.2	35.6		
Total Manufactures	Food products, beverages and tobacco		3.5	0.5	87.9	12.1	0.8	56.5	31.4	
	Textiles, textile products, leather and footwear		4.1	1.0	80.2	19.8	1.1	56.6	23.5	
	Chemicals and non-metallic mineral products		10.6	8.5	55.6	44.4	3.3	14.6	41.0	
	Chemicals and non-metallic mineral products	Coke, refined petroleum products and nuclear fuel		4.8	6.2	43.4	56.6	0.7	11.3	32.1
		Chemicals and chemical products		4.6	1.8	71.4	28.6	2.0	20.6	50.8
		Rubber and plastics products		0.9	0.3	72.9	27.1	0.5	14.1	58.8
		Other non-metallic mineral products		0.4	0.1	75.5	24.5	0.1	8.8	66.7
	Basic metals and fabricated metal products		2.7	1.8	59.8	40.2	1.6	6.0	53.8	
	Basic metals and fabricated metal products	Basic metals		1.9	1.4	57.9	42.1	1.1	3.6	54.3
		Fabricated metal products		0.8	0.4	65.3	34.7	0.5	13.1	52.2
	Machinery and equipment, nec		1.5	0.7	67.4	32.6	1.2	30.1	37.2	
	Electrical and optical equipment		2.3	1.1	67.6	32.4	2.8	31.7	35.9	
	Electrical and optical equipment	Computer, Electronic and optical equipment		1.3	0.6	68.8	31.2	2.1	38.6	30.2
		Electrical machinery and apparatus, nec		1.0	0.5	66.0	34.0	0.7	22.7	43.4
	Transport equipment		2.7	1.3	68.0	32.0	1.8	37.1	30.9	
	Transport equipment	Motor vehicles, trailers and semi-trailers		1.3	0.6	67.5	32.5	1.2	37.1	30.4
		Other transport equipment		1.4	0.7	68.5	31.5	0.6	37.1	31.4
Manufacturing nec; recycling		4.2	3.1	57.6	42.4	0.6	36.0	21.6		
Total Business Sector Services		35.4	5.0	87.6	12.4	4.5	34.8	52.8		
Total Business Sector Services	Wholesale and retail trade; Hotels and restaurants		12.6	0.6	95.6	4.4	1.4	54.9	40.7	
	Wholesale and retail trade; Hotels and restaurants	Wholesale and retail trade; repairs		11.2	0.4	96.5	3.6	1.1	50.6	45.9
		Hotels and restaurants		1.3	0.2	88.9	11.1	0.2	88.9	0.0
	Transport and storage, post and telecommunication		10.5	2.4	81.2	18.9	1.9	31.0	50.2	
	Transport and storage, post and telecommunication	Transport and storage		9.5	2.2	81.3	18.7	1.8	30.9	50.3
		Post and telecommunications		1.0	0.3	80.1	19.9	0.1	31.1	49.0
	Financial intermediation		0.7	0.0	94.4	5.6	0.4	26.2	68.2	
	Real estate, renting and business activities		11.7	2.0	85.6	14.4	0.9	19.5	66.1	
	Real estate, renting and business activities	Real estate activities		0.1	0.0	98.5	1.5	0.0	98.5	0.0
		Renting of machinery and equipment		0.1	0.0	91.9	8.1	0.1	88.1	3.8
Computer and related activities		5.3	0.4	92.5	7.5	0.3	31.8	60.7		
R&D and other business activities		6.1	1.5	80.1	19.9	0.6	8.0	72.1		
Community, social and personal services		4.7	0.6	89.6	10.4	0.2	60.6	29.0		
Other community, social and personal services		4.6	0.5	89.6	10.4	0.2	60.2	29.5		

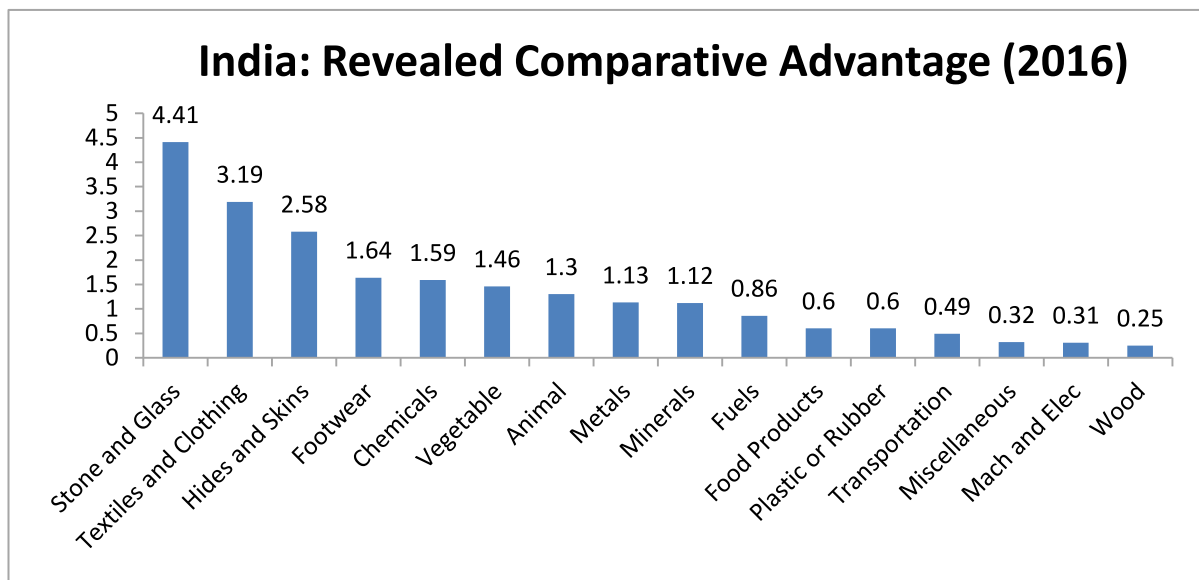
Source: Trade in Value Added - OECD

addition concentrated domestically, going into export of intermediate goods. Community, social and personal services are also GVCs in India with value addition concentrated domestically and a major share of it going into export of final goods.

Chart 1 highlights the industries in which India has a Revealed Comparative Advantage (RCA) or Disadvantage. The RCA indicates whether a country is

in the process of extending the products in which it has a trade potential, as opposed to situations in which the number of products that can be competitively exported is static. A value of less than unity implies that the country has a revealed comparative disadvantage in the product. Similarly, if the index exceeds unity, the country is said to have a Revealed Comparative Advantage in the product.

Chart 1



Source: World Integrated Trade Solutions

India has a RCA in Stone and Glass, Textiles and Clothing, Hides and Skins, Footwear, Chemicals, Vegetable, Animal, Metals and Minerals industries as against a Comparative Disadvantage in Fuels, Food Products, Plastic or Rubber, Transportation, Miscellaneous, Machinery and Electricals, and Wood industries.

GVC Potential of Maharashtra

Maharashtra is one of the foremost states of India in terms of investments, exports and its contribution to the GDP. The state attracts huge FDI owing to its investor-friendly policies, proactive governance and infrastructure availability.

Cities such as Mumbai, Thane and Pune are home to major industrial activity and have become prominent business hubs. Maharashtra is also home to major ports such as JNPT, MbPT and minor ports such as the Dighi port.

The state attracts investments in heavy industries such as petroleum products, metal and metal products, machinery and transport equipment as well as other major industries such as textile, food and agro-based products, drugs and pharmaceuticals, plastic products and information technology.

These industries also constitute the major exports of Maharashtra and enhancing investments in these industries can aid the state in garnering a larger pie of

the global trade wherein India's share is nominal right now.

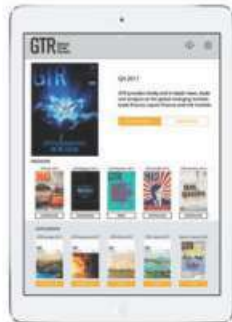
Considering that Maharashtra is home to major industrial hubs such as Mumbai and Pune, there is tremendous scope for MSMEs to set up ancillary clusters in the state and be a part of GVCs.

While various districts in the Nashik and Pune divisions are home to ancillary industries due to their strategic location, many districts in the Aurangabad, Nagpur and Amravati divisions need to scale up.

These regions have the potential of adding to the existing engineering, textile and agro-processing clusters in Maharashtra that can provide raw materials to the major industries in the Mumbai and Pune regions to further Maharashtra's development, as also accentuate its exports, which should be encashed.

(This article has been prepared by MVIRDC World Trade Centre Mumbai Research Team)

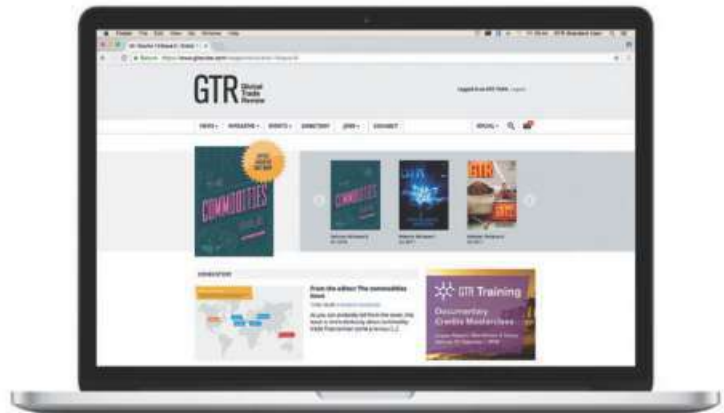
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The Role of MSMEs in an Economy and How They Fit into Value Chains

Dr. Robert B. Koopman

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Background

There is an extensive literature on why firms exist (in fact such work helped win a Nobel prize) and how firm size affects economic performance around such measures as efficiency and returns to factors (profitability for capital and wages for labor.)¹

These literatures are worth understanding as they help explain why firms create, or don't create, value chains and why firms of different sizes pay workers more or less, participate in international trade, and innovate.

Thus these lines of research are important for understanding the questions around how Global Value Chains help accelerate SME growth and development.

Much has been written about the importance of Micro, Small and Medium Sized Enterprises (MSMEs) to economies large or small, advanced or developing.

No matter how defined (and definitions do vary, with no settled agreement) MSMEs account for a very large

share of the number of firms in an economy and a sizable share of employment.

One also finds references to the importance of MSMEs in innovation and dynamic growth - the successful, fast growing MSME of today is frequently a large multinational company (MNC) of tomorrow.²

An important element in balancing firm size, innovation and market power is easy entry of firms to create a competitive environment.

While some MSMEs are indeed on the cutting edge of services, manufacturing or ICT technologies, most MSMEs are small services firms in retail or consumer direct services, and particularly in developing countries, small farmers.

The basic economic facts for MSMEs is that they are relatively low productivity, pay their employees less than larger firms, and most do not participate in international trade.³

There is not one-size-fits-all approach to characteriz-



¹ See for instance seminal work by Coase, "The Nature of the Firm." *Economica* Volume 4, Issue 16, November 1937, pages 386-405, and Baumol, *Business Behaviour, Value and Growth*, Macmillan, New York, 1959.

² Many argue, such as Schumpeter, that large firms in concentrated markets are key to innovation, but the literature also suggests that while fewer small firms innovate those that do are often key innovators in a number of sectors.

³ See for instance Schmidt and Zimmerman, *Work Characteristics, Firm Size and Wages*, *The Review of Economics and Statistics* Vol. 73, No. 4 (Nov., 1991), pp. 705-710

ing MSMEs. They play important roles in generating income and employment for millions of people, and important employers in millions of communities, and while some are indeed destined to become the large firms of tomorrow, most provide a basic income to the owner, are not particularly competitive, and they pay their employees less compared to larger firms.

This fundamental economic fact, that MSMEs are less productive and pay less, but play important roles in innovation and growth, while often providing important services to local communities.

One goal for governments is to consider how to raise productivity in MSMEs, which would increase owner income and allow for higher pay for MSME employees.

How might value chains play a role in improving performance for those MSMEs potentially placed to participate in them?

I use the term value chains with intent. In the mid-20th century many firms aimed to emulate the approach of Henry Ford, who recognized that with automation and within firm control of input manufacturing he could improve productivity and reduce costs.

This was because of variance in the productivity and quality of Ford's original input suppliers. Ford's River Rouge plant was a classic example of large, vertically integrated manufacturing plant - in Ford's plant the aim was for the only suppliers to be those of essential raw materials.

Today most automobile production is far more fragmented in terms of parts, components and services than that of Ford's vision.

It is often forgotten that Domestic Value Chains (DVCs) preceded Global Value Chains (GVCs) - that is fragmentation of production processes across firms has typically occurred first domestically as more common laws, rules, physical and communications infrastructure, language that more easily allows market transac-



tions to replace within firm transactions.

There is also research to suggest that domestic fragmentation is far more common than global fragmentation.⁴

It was only with dramatic improvements in physical and communications infrastructure, and the improvement of international agreements such as various trade and investment agreements, that firms began to realize they could efficiently manage supply chains across borders and dramatically improve efficiency and lower costs and thus further fragment production across borders.⁵

Finally, many of the MSMEs that participate in DVCs may be participating in GVCs and not be aware of it as the larger firm exports part of the output produced with inputs and/or services purchased from MSMEs.⁶

Whether part of a domestic or global value chain MSMEs that want to integrate into a larger firm's supply chain must be able to meet various criteria, such as technical standards, timely delivery, specific quality requirements, etc.⁷

Meeting these criteria typically means MSMEs must become more productive and increase or upgrade their capabilities.

The main point here is that MSMEs can essentially fit into 4 broad, and perhaps overlapping, categories -

⁴ Fort, Teresa, *Breaking Up Is Hard to Do: Why Firms Fragment Production Across Locations* (July 1, 2013). US Census Bureau Center for Economic Studies Paper No. CES-WP-13-35. Available at SSRN: <https://ssrn.com/abstract=2291979> or <http://dx.doi.org/10.2139/ssrn.2291979>

⁵ Baldwin, *The Great Convergence: Information Technology and the New Globalization*, Harvard University Press, November, 2016

⁶ See for example USITC, "Small and Medium-Sized Enterprises: Characteristics and Performance," USITC publication no. 4189, November 2010, and WTO, *World Trade Report 2016*, "Levelling the Trading Field for SMEs." September 2016.

⁷ For a good discussion of the constraints to joining GVCs see Cusolito, Safadi, and Taglioni, "Inclusive Global Value Chains: Policy Options for Small and Medium Enterprises and Low-Income Countries" World Bank and OECD, 2016, p. 5.

unable or not interested in becoming part of a larger firm's supply chain, increase productivity and become more efficient, grow fast and become a larger firm, or be able to integrate into a larger firm's value chain.

There is substantial evidence that MSMEs that join larger firm value chains become more efficient and are more productive, particularly if they participate in Global Value Chains.

There is also evidence that those MSMEs that join a value chain tend to upgrade their capabilities, but not all. A good description of upgrading can be found in Taglioni and Winkler (2016).

What we know about impediments to MSME participation in trade and GVCs?

The WTO World Trade Report 2106 identified obstacles to SME participation in trade. For instance fixed market entry costs, like information on how to sell in foreign markets, border related costs such as regulations and standards, are the most important obstacles preventing MSMEs from exporting.

The report also argues that engaging in international trade can help firms increase their productivity. Participating in global markets helps MSMEs to learn and upgrade their technology, and benefit from economies of scale, potentially improving growth, increasing employment, and improving wages.

A more diversified market also means that MSMEs' are likely to "survive" longer. But the evidence indicates that costs related to trading, including those that increase with the size of shipments, reduces MSME trade much more than for larger firms.

The report also indicates that "E-commerce and participation in global value chains are two ways in which SMEs can partially overcome these barriers and improve their participation in global trade.

E-commerce allows SMEs to reach customers at much lower costs. Global value chains give SMEs a way to access foreign distribution networks and exploit economies of scale.

Yet, SMEs face specific obstacles in seizing these opportunities. The main issues SMEs face with web

sales relate to: the logistics of shipping a good or delivering a service; security and data protection; and payments.

Among the major challenges SMEs face in joining global value chains are: logistic and infrastructure costs; regulatory uncertainty; and access to skilled labour."

What we know about trade agreements and TFA in particular for MSME participation in GVCs.

Trade (and investment) agreements, particularly the Trade Facilitation Agreement can help reduce obstacles to MSMEs participation in trade.

In general terms the WTO agreements do not usually identify MSMEs for special treatment, but it also true that the agreements, by reducing uncertainty and trade costs help them participate more in trade.

Research also suggests that trade facilitation holds particular benefits for SMEs, encouraging their entry into international markets.

By lowering a range of trade costs, in particular the cost of accessing information on rules and regulations in foreign markets, the WTO's Trade Facilitation Agreement addresses one of the main obstacles to SMEs exports.

WTO rules also provide sufficient flexibility for national governments to take measures to remedy market failures that prevent these enterprises from participating in international trade.

The WTO's capacity-building work, which tries to expand trading opportunities of its developing country members, puts a significant focus on SME internationalization.

Other positive steps could be taken, for example to increase access to trade finance or to enhance transparency mechanisms to make it easier for SMEs to access essential information.

About the Author

Dr. Robert B. Koopman is also Adjunct Professor, Graduate Institute, Geneva. Prior to joining the WTO, he was Chief Operating Officer and also had served as Chief Economist for the United States International Trade Commission.

Prioritising India's Value Chain Strategy for Inclusive Growth



Mr. Andrew Crosby
Managing Director
International Centre for Trade and
Sustainable Development, ICTSD

The siren song of growth and development through value chains is strong. Changing structures of production in the new economy hold great potential for the businesses that can adapt and compete. Such opportunities are open to a wide array of firms, including those producing goods and services. And, the attraction of such participation is substantial for firms and governments: the potential to expand into new markets, development of new skills and knowledge transfer, and of course jobs.

The challenges to successful participation in value chains, however, are manifold. Businesses and governments must understand and embrace new modes of production, while adapting their domestic and international strategies accordingly. The path to international competitiveness in this domain goes far beyond subsidies, tariffs, and cheap labour. Competitiveness is increasingly driven by value generated through a high-powered mix of services, innovation and IP, digital capacity, skilled workforce, and a supportive and open regulatory environment.

The opportunity for India to engage its businesses as drivers of sustainable development is immense. Conversely, failure to pursue these opportunities—and others that are presented by new structures of production—could stunt the much needed growth that India seeks to achieve its sustainable development goals—including absorbing approximately a million new workers each month over the coming years.¹

Value chains demand new thinking

The concept of value chains is easy to grasp: dispersed production takes place across multiple locations, firms, and borders. Their existence is defined by the ability of companies to interact fluidly across borders and diverse operating environments to produce high quality goods and services at lower cost. A perceived benefit of such structures is that businesses can gain and participate in international trade without needing ownership of a global production system. National and regional businesses can reach new markets and business opportunities, acquire new skills and know-how, and build more dynamic and innovative domestic markets that are capable of delivering new growth and development.

But, effective participation in value chains requires globally competitive businesses. A key factor business competitiveness is a supportive enabling environment that corresponds to emerging structures of production. The structures and policies that governments have conceived over the past 50 years still have value—particularly the concept of non-discrimination and transparency—but they need to be updated to reflect the new logic for production and trade. In this emerging world, imports and exports are both essential; and the value of goods and services are increasingly defined by the service model and intangible assets that are brought to bear in production and delivery.

National and international efforts at generating competitiveness and exports have been informed and shaped in the context of the “Goods World” of the 20th

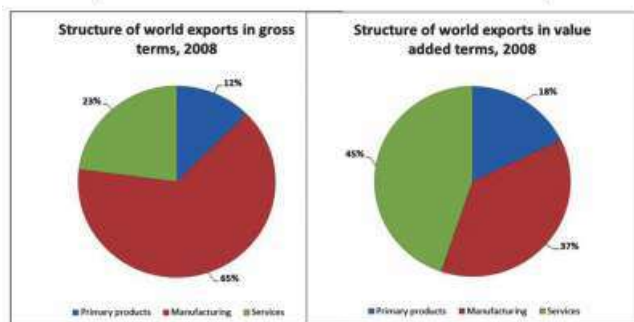
¹ Joshi, Vijay. *India's Long Road: The Search for Prosperity* (p. 65). Oxford University Press. Kindle Edition. Around a million new job-seekers will enter the labour force every month for the next three decades.

Century. This model was anchored in a view of competitiveness that combined cheap labour, subsidies and tariffs to provide an additional advantage or protection; and a simple view of products as purely physical finished goods that are shipped from point A to point B. Many governments remain steadfastly in this camp, and remarkably, international governance on trade—and the thinking that pervades international trade negotiations—still remains largely shaped these rules and logic.

The Goods World story has been eroding for more than a decade. Of course, physical goods still matter—after all, we still live in this world for the foreseeable future—but increasingly the competitiveness and value of goods has been shifting from the material costs of sourcing and manufacturing, to a mix of innovation drivers including: services, digital technology and communications; intangible factors such as intellectual property and trademarks; and new structures of finance and production that serve to generate a growing proportion of value-added in manufacturing. These have been mixed together with advanced data analytics and knowledge management to transform manufacturing and workplaces.

There will be a competitiveness and growth premium for those countries and business that can adapt to these new models and define the next generation of governance and negotiations that are based on modern economic realities and the way trade and investment actually work.

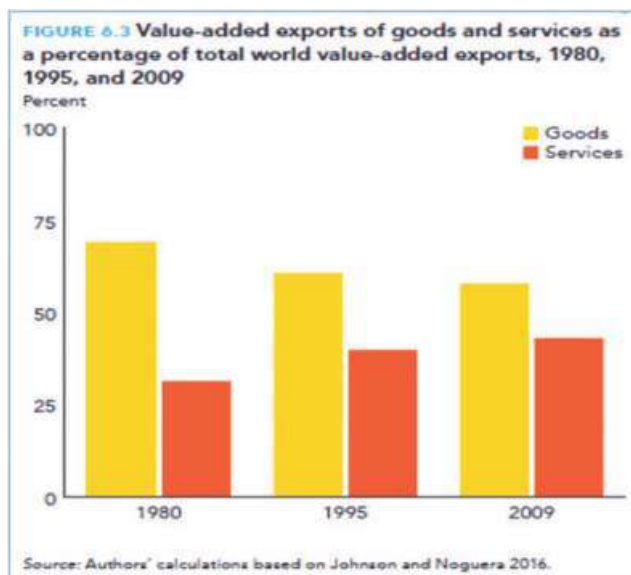
Sectoral contribution to total trade, gross and value-added measures (2008)
(Source: WTO Secretariat estimates based on OECD-WTO data)



Understanding value is essential to understanding new structures of production

Increasingly the value of production and trade is being driven by services, which are become the defining feature of the modern global economy. As is evident in the two charts below: while goods play a large role in the global economy, their value is increasingly defined by the services that go into them (chart on sectoral contribution to trade).²

In their recent contribution to Global Value Chain Development Report 2017, Heuser and Mattoo declare “Services facilitate the emergence of GVCs in a way that goods do not. This is partly illustrated in the shift from goods to services driven trade. The authors’



calculations (below covering the period from 1980 to 2009) show a steady increase in value added generated by goods versus services. As value levels attributable to services grow as a percentage of global trade, those attributable to goods have diminished.³

The trends described by these researchers and others has been increasingly validated through ongoing research.⁴ New economic models are being super-charged with the intensification of production involving goods and services whose value is increasingly

² Low, Patrick. “A Neglected World: The Role of Services in Trade and Global Production Networks.” SlidePlayer, Fung Global Institute, 26 Jan. 2015, slideplayer.com/slide/11471095/.

³ Heuser, Cecilia, and Aaditya Mattoo. “Service Trade and Global Value Chains.” WTO | Global Value Chain Development Report 2017, World Bank, 2017, www.wto.org/english/res_e/publications_e/gvcd_report_17_e.htm.

⁴ Low, Patrick. “Rethinking Services in a Changing World.” E15 Initiative, ICTSD / WEF, 2016, e15initiative.org/publications/rethinking-services-changing-world/; also see Sauve, Pierre, and Martin Roy. “Research Handbook on Trade in Services.” Edward Elgar Publishing, 2016, www.e-elgar.com/shop/research-handbook-on-trade-in-services.

defined by a mixture of new technology, advanced communication and interconnection; innovation and intellectual property data analysis and knowledge management that render the distinctions between goods and services difficult. For example, the Internet of Things is emerging, in which manufacturing and consumer level goods and services are bound together with deeply interconnected services from which they are inseparable.

Reforming to compete

The ability to participate in value chains depends on a conducive enabling environment for business. This in turn requires government strategy and action to adapt domestic and international regulatory environments to suit strategic needs, resource endowments, and constraints.

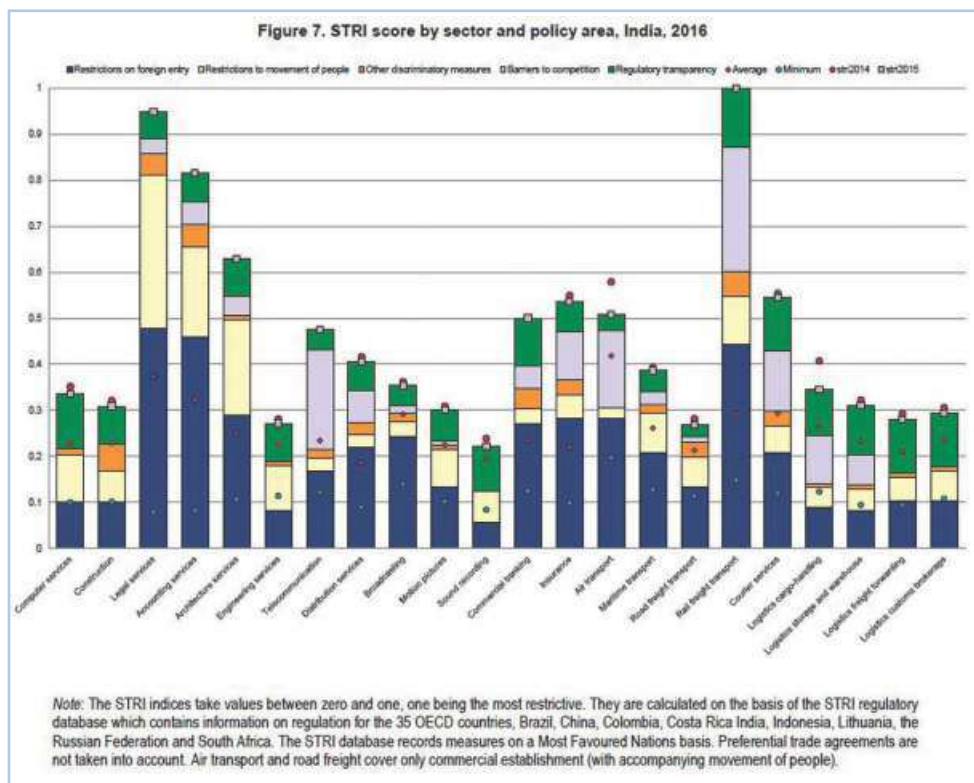
Doing business better

A robust enabling environment for services and services trade is essential for creating a competitive environment for businesses—this is particularly the case for small businesses generating doing business are

numerous and interconnected, but it is obvious that aspects of India’s business environment—in spite of recent improvements—are an exceptional drag on business. These directly affect national competitiveness—and hence firm competitiveness—to participate in new structures of production. Since businesses must channel more resources into starting and running their operations than businesses in other countries, they will be less likely to compete and participate in value chains.

Services constitute a major area of importance for value chains and so services performance is an important indicator of value chain friendliness. Notwithstanding India’s role as a major services exporter, the OECD Services Trade Restrictiveness Index highlights the level of friction, and of course unrealised potential, in India’s services competitiveness (see chart below).

The OECD notes that “India tends to have more restrictive regulation than most other countries covered by the OECD Services Trade Restrictiveness Indices (STRI).” It goes on to observe that these scores are “particularly high in the services sectors most important for supporting the objectives of the Make in India initiative.”⁵



To get a sense of how some of these barriers compare to other countries, the World Bank’s doing business reports are useful in understanding relative competitiveness between markets from this perspective. While India’s Doing Business rank in 2016 and 2017 was 130, it improved significantly in 2018 when it ranked 100 (somewhat below half of the 190 countries in the index). This overall ranking belies a highly variable set of sub-rankings where India is in the top quartile in three areas: getting electricity, getting credit, and protecting

⁵ Benz, S., A. Khanna and H. Nordås (2017), “Services and Performance of the Indian Economy: Analysis and Policy Options”, OECD Trade Policy Papers, No. 196, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9259fd54-en>

TABLE 3.2 The 10 economies improving the most across three or more areas measured by *Doing Business* in 2016/17

Economy	Ease of doing business rank	Change in DTF score	Reforms making it easier to do business									
			Starting a business	Dealing with construction permits	Getting electricity	Registering property	Getting credit	Protecting minority investors	Paying taxes	Trading across borders	Enforcing contracts	Resolving insolvency
Brunei Darussalam	56	5.77	✓	✓		✓	✓	✓	✓	✓	✓	
Thailand	26	5.65	✓		✓	✓	✓	✓	✓		✓	✓
Malawi	110	5.42		✓			✓			✓		✓
Kosovo	40	4.94	✓				✓					✓
India	100	4.66	✓	✓			✓	✓	✓	✓	✓	✓
Uzbekistan	74	4.50	✓	✓	✓			✓	✓			
Zambia	85	3.94					✓		✓	✓		
Nigeria	145	3.82	✓	✓		✓	✓		✓			
Djibouti	154	3.79	✓	✓		✓	✓	✓				
El Salvador	73	3.56		✓	✓				✓	✓		

Source: *Doing Business* database.

Note: Economies are selected on the basis of the number of reforms and ranked on how much their distance to frontier (DTF) score improved. First, *Doing Business* selects the economies that implemented reforms making it easier to do business in three or more of the 10 areas included in this year's aggregate distance to frontier score. Regulatory changes making it more difficult to do business are subtracted from the number of those making it easier. Second, *Doing Business* ranks these economies on the increase in their distance to frontier score due to reforms from the previous year (the impact due to changes in income per capita and the lending rate is excluded). The improvement in their score is calculated not by using the data published in 2016 but by using comparable data that capture data revisions and methodology changes. The choice of the most improved economies is determined by the largest improvements in the distance to frontier score among those with at least three reforms.

minority investor rights; but in the bottom quartile of countries in a number of areas including: starting a business, 156; getting a construction permit, 181; registering property, 154; trading across borders, 146; enforcing contracts, 164.⁶

India's improvement is great news, but such adaptation is not a single-year effort. A competitive enabling environment is a moving target that needs to be addressed through adaptive, strategic, policies that provide consistent improvements, while responding to changing conditions. As the OECD report notes, "simultaneous policy reforms in the communications and distribution sectors could unleash India's export potential in manufactured goods and higher-end professional services."⁷

Lowering friction, increasing intensity

The nature and intensity of connected flows of services, finance, digital communications and personnel,

are indicators of a country's ability to grow and sustain emerging modes of production, such as value chains. Raising performance on lagging aspects, while continuing to build on leading ones, will benefit competitiveness across the board, including for SMEs. Conversely, constraints in areas such as data and finance, may be holding countries back from realising its potential.

Data flows, management of data, and data analytics will be critically important for these new structures of production. As data from McKinsey shows, the gap between economies with high data flows and those with lower level flows is wide and only narrowing very slowly.⁸ Addressing the gap in data flows is not an end in itself, but it is an indicator of an economy's ability to manage and cultivate a critical aspect of the environment on which value chains depend.

In this respect, the MGI Connectedness Index provides some useful insights. According to McKinsey, "The MGI Connectedness Index offers a comprehensive look at

⁶ *Doing Business 2018 - Reforming to Create Jobs* - World Bank Group, World Bank, 2018, www.doingbusiness.org/reports/global-reports/doing-business-2018.

⁷ Ibid.

⁸ Manyika, James. et. al., "Digital Globalization: The New Era of Global Flows." McKinsey Global Institute, McKinsey & Company, Feb. 2016, www.mckinsey.com/business-functions/digital-mckinsey/our-insights/digital-globalization-the-new-era-of-global-flows.

Extracted from McKinsey Global Institute, Global Connectedness Index 2016 (data 2014)

Connectedness index rank		1-10	11-25	26-50	>50	Flow intensity	100+	70-99	<70
Rank	Country	Score	Goods	Services	Finances	People	Data	Flow value \$Billion	Flow Intensity % of GDP
1	Singapore	64.2	1	2	2	12	6	1,392	452
3	United States	52.7	7	7	3	1	7	6,832	39
7	China	34.2	4	16	4	82	38	6,480	63
14	Russia	16.1	21	25	18	5	25	1,059	57
21	Mexico	10.7	14	63	34	18	41	1,022	80
30	India	8.5	24	10	35	58	70	1,316	64
41	Turkey	5.1	28	40	53	38	29	521	65
51	Indonesia	3.4	31	49	38	106	76	504	57

how countries participate in inflows and outflows of goods, services, finance, people, and data. [It] takes into account the size of each flow for a country relative to its own GDP or population (flow intensity) as well as its share of each total global flow.”⁹

Several points are worth noting. India, like several other large economies does not have an exceptionally high flow intensity. Compare this with a country like Singapore and a number of other countries which have flow intensities many times the value of GDP. India is the norm for a large economy on flow intensity, but the example of Singapore shows that there is clearly room to grow.

India’s strength in services flows, which rank in the top 10, is notable. This is in contrast to lagging flows, particularly in the areas of data, people, and finance. These disparities provide an indication relative advantages and areas for potential growth and may well impact other areas such as goods, where India flows are above its average (24 versus 30), but still well below major manufacturing leaders such as China and the US.

One illustration of the importance of these trends is the productivity gains from the Internet of Things (IoT) in which global gains could amount to \$11.1 trillion by 2025, with 40% of the gains expected operational efficiencies in the earlier segments of the production chain, according to According to a McKinsey Global

Institute (MGI) Report.¹⁰ A great deal of these gains depend on countries and companies adopting policies and practices that enable such development. “As the IoT industry evolves over the next ten years, we expect the division of value among players to shift, with an increasing share going to suppliers of software and analytics. Suppliers of foundational technologies such as hardware and IoT device clouds as well as installers of IoT systems are likely to capture less value in 2025 than they do today.”¹¹

McKinsey’s observation raises two important points: first, it is clear that economies that can digitise and adapt their operations to IoT will be better positioned to capture value in value chains; and second, the shift toward knowledge-intensive services will be a significant trend for both businesses and policymakers, who will need to respond in new ways. India is well placed to pursue such trends if it is able to build on and greatly expand its existing national capacities.

A new economy needs new industrial policies

Countries are also trying to improve the ability of their companies to enter, compete, and thrive in global markets. In so doing, they are taking a wide range of measures from improving the ability of national firms to meet standards established by lead firms, set by foreign governments, or established by international bodies, as well as pursuing industrial policies.¹²

⁹ Manyika, James, et al. “Digital Globalization: The New Era of Global Flows.” McKinsey Global Institute, McKinsey & Company, Feb. 2016, www.mckinsey.com/business-functions/digital-mckinsey/our-insights/digital-globalization-the-new-era-of-global-flows.

¹⁰ McKinsey

¹¹ Manyika, James, et al. “Unlocking the Potential of the Internet of Things.” McKinsey Global Institute, McKinsey & Company, June 2015, www.mckinsey.com/business-functions/digital-mckinsey/our-insights/the-internet-of-things-the-value-of-digitizing-the-physical-world.

¹² “ZED | Zero Defect Zero Effect.” ZED | Zero Defect Zero Effect, www.zed.org.in/ for example.

One area where countries must focus is ensuring interoperability and regulatory coherence. As flows become more important, the need for interoperability and automaticity also grow. Anoop Singh, Distinguished Fellow at Gateway House in India; and Former Director, Asia-Pacific, International Monetary Fund writing for ICTSD in the context of G20 priorities said that “India and other emerging markets need to fully engage in developing universal standards conducive to innovation, productivity, and growth.”¹³ Such standards are being actively developed in trade and economic integration agreements, but also through broader cooperation clubs such as G20 and on a bilateral basis between major markets.

India’s participation, particularly at the international level in setting standards or frameworks for standards—such as strengthening domestic efforts to promote internationally accepted standards for products and services; or participating in domestic regulation talks at WTO—is important for creating a level playing field and a more predictable business

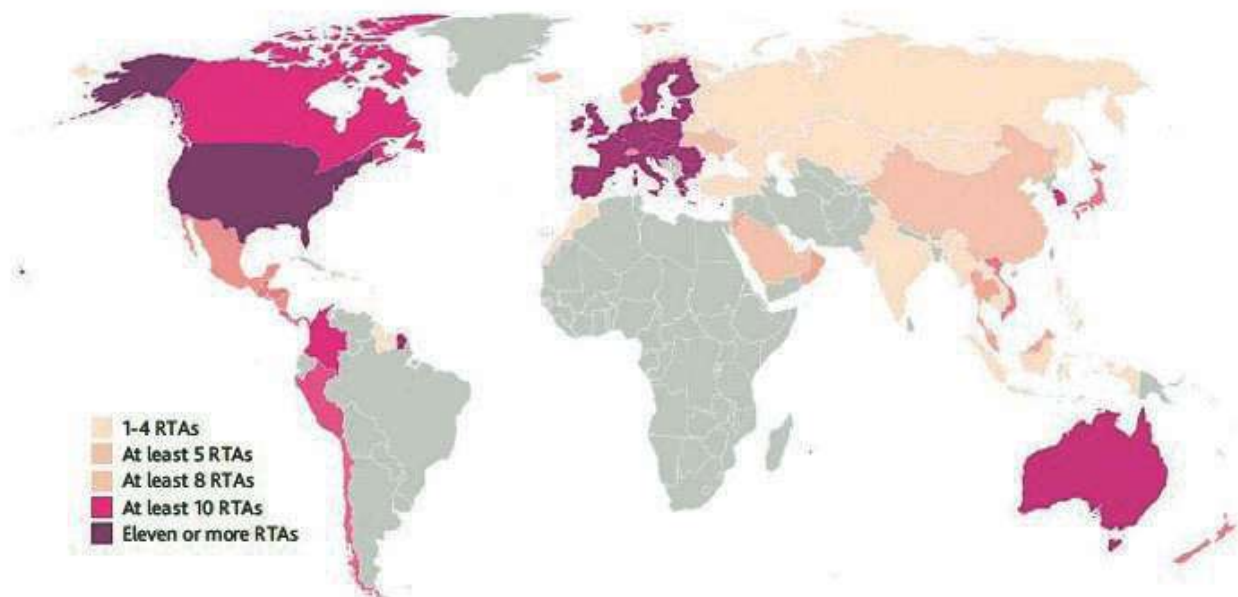
environment for Indian business.

Changed thinking is also afoot in respect to industrial policies. Many steps away from the import substitution strategies of the past, modern industrial policy “is not a collection of policies but a set of processes. It is a systematic and structured effort about taking advantage of investment opportunities for a society, with the specific methods being chosen in light of the constraints facing a state at any given time.”¹⁴

“An important focus of industrial policy today is to enhance potential links among domestic and global supply chains, acquire a larger share in global value chains, and over time move up the value-added segments of value chains.”¹⁵

Such policies include many of those items noted above in the section on services trade and doing business and they extend to bi-lateral and regional negotiations, particularly, where individual countries may have a higher likelihood of finding common ground.

Figure 2. Number of RTAs with e-commerce provisions, by country



Source: Author’s representation based on Mark Wu, *Digital Trade-Related Provisions in Regional Trade Agreements: Existing Models and Lessons for the Multilateral Trade System*, ICTSD (2017)

¹³ G20 Hangzhou Summit: Proposals for Trade, Investment, and Sustainable Development Outcomes, 28 July 2016, by ICTSD <https://www.ictsd.org/themes/global-economic-governance/research/g20-hangzhou-summit-proposals-for-trade-investment-and>

¹⁴ New Industrial Policy and Manufacturing: Options for International Trade Policy, Policy Options Paper, by Harsha V. Singh for the E15 Initiative, 2016, ICTSD / WEF, <http://e15initiative.org/publications/new-industrial-policy-manufacturing-options-international-trade-policy/> This publication contains an extensive exploration of potential policies that are consistent with building competitiveness in the new economy.

¹⁵ Ibid.

Such negotiations—well chosen—can also be used to reinforce domestic commitments to reform under consideration independently for purposes of improving the business environment.

Reshaping the global vision through trade and integration

Countries are also making efforts to ensure that the international enabling environment is as favourable as possible. This includes pursuing trade and investment policies multilaterally, regionally, and bilaterally.

In respect to multilateral agreements, the WTO has been effectively stalled for a number of years. The Work Programme on E-commerce, and negotiations on trade in services and intellectual property have been caught in a web of negotiating complications for more than 20 years.

This is unfortunate, since the WTO is a venue in which extended agreements in the areas that are most important to value chains could be globalised, generating gains around the world and also helping to maintain a level playing field.

While no countries are beneficiaries of this lack of progress, those who are most hurt by it are small countries and smaller firms. They are less able to manage the complexity and are the most sensitive to barriers to trade.

In this vacuum, and in the recognition that many countries will want to go beyond the least common denominator approach available at the WTO, countries have increasingly looked to regional and bilateral negotiations.

Many such agreements reflect and extend tariff improvements over those negotiated at the WTO. However, many also bring new provisions, including those that are relevant to value chains.

One such category of provisions is related to e-commerce, where more than 50% of WTO members are members of agreements which contain one or more

ecommerce provisions. Contrary to perception, these are not just developed countries, but rather a broad group of developed and developing countries.

It is clear in the graphic above that some countries are advancing regional agreements that include provisions related to e-commerce.

While the numbers are important, the potential impacts of the agreements including the depth and coherence of provisions is important as an indicator of approach toward competitiveness in this area, but also as an indicator of where leading disciplines in this area are being formed.

For agreements with weak or stand-alone provisions, there may be some value in terms of trade and facilitation, but probably relatively little in terms of defining new global norms.

Will the Regional Comprehensive Economic Partnership (RCEP) in which India is already engaged have ambitious e-commerce or new economy provisions? For a major economy like India, such considerations should be a concern.

Is there a venue that is more conducive to India's participation in shaping the emerging global frameworks on the critical issues for value chains: namely, digital, services, IP, and innovation?

Does India want to participate in the Transpacific Partnership (TPP) or work with major trading partners in different configurations? Research by Bergsten and cited by Joshi, estimates India's national income would be permanently 25 per cent higher if it joined the TPP as well as the FTAAP, and its exports would be permanently 60 per cent higher, with the gains phased in over 10 years.

Joshi notes that such predictions are perhaps overoptimistic—but not so much as to discard them from inclusion in his analysis.¹⁶

One place India can exert pressure and help shape the broader environment for value chains is through its membership at G20. India has great potential weight if

¹⁶ Bergsten, C. (2015), 'India's Rise: A Strategy for Trade-Led Growth', Briefing Paper No. 15-4, Peterson Institute of International Finance; cited in Joshi, Vijay. *India's Long Road: The Search for Prosperity* (p. 324). Oxford University Press. Kindle Edition.

it is used in a direction that is already endorsed by some of the members to generate a broader consensus that resulted in political momentum at WTO or elsewhere.

This is important not only on the trade related elements, but increasingly on broader competitiveness elements that will come to the fore as trade and investment become more mobile including, competition policy, financial and tax flows; and regulatory coherence efforts.

India's role as a major global economy gives it power and influence on issues that are critical to its development interests.

India should choose where and how to participate, and do so actively. Staying on the sidelines or pursuing a unique national vision that does not help generate international business interoperability cannot help to advance its interests.

No time to lose

As a vibrant and interactive democracy, India faces many challenges, but therein lies the potential to harness human creativity to take advantage of new economic models that can help to generate jobs and provide economy-wide benefits for inclusive development.

The country is well positioned in some areas that are critical for value chains and in the last few years, undertaking bold measures such as instituting GST or the Aadhaar scheme, that help advance the fundamental restructuring of the economy for greater competitiveness, while providing economy-wide, inclusive benefits.

Of course there are unexpected and uneven consequences of all such undertakings. These should not be ignored, but neither should the importance of making such changes be minimised. Pursuit of an inclusive growth strategy puts the emphasis rightly on the overall health of the economy and the ability and resilience of SMEs as agents of creativity, development, and inclusion. This is the fundamental resource in moving from participant to leader in

responding to and shaping the new economy in the pursuit of sustainable development. Industrial policy must reflect such goals rather than focusing on national champions.

Policymakers setting priorities on international negotiations need to focus on getting out of historic silos. A value chain strategy is a services, digital, innovation, regulatory coherence strategy that is undertaken with the technical and political will to carry it forward.

Progress in these areas will have multiple impacts on the ability of business to generate future growth in both goods and services. Policymakers need the input of the broad swathe of business stakeholders with wisdom and strength to separate what is good for particular businesses versus policies that will help to achieve sustainable development objectives. This will require making choices and creating some winners and losers. The lesson from the developed world is that "no pain, no gain" theory and an assumption that markets will take care of the fallout is not viable.¹⁷ The long run challenge is to match bold steps on generating modern competitiveness with equally bold steps on inclusion and resilience.

Finally, India faces critical strategic choices on international policy. To sit on the fence will be a losing option and there is no rationale for doing so. But a more difficult decision is whether and how India will cast its lot, wholly or partially, with other major trading nations. The US, China, and Europe, all offer distinct approaches with benefits and drawbacks.

But they are not all equal. India's democratic identity and its existing strengths offer great potential and scale within a fully globalised services economy of mobile data flows, universal standards. In such a system, India can scale the talents of its population as innovators and entrepreneurs.

About the Author

Mr. Andrew Crosby leads ICTSD's work on harnessing global economic governance for sustainable development and new economic structures at the WTO, G20, and in regional and national policymaking.

¹⁷ Raworth, Kate. Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist (p. 139). Chelsea Green Publishing. Kindle Edition. Distributive by design is just one element of this very useful guide to how policymakers need to think differently about economics.

Countries Can Now Industrialise by Joining GVCs Without the Need to Build their Own Value Chain from Scratch

Dr. Deborah Winkler

Senior Consultant in the World Bank Group's Macroeconomics, Trade and Investment Global Practice



In an exclusive interview to World Trade Centre Mumbai, Dr. Winkler shares her valued perspectives on integrating micro, small and medium enterprises into the Global Value Chains. Speaking about government policy to promote Global Value Chains, Dr. Winkler has stressed on the need to adopt a nuanced approach to assess investment projects in terms of their linkage and spillover potential. Excerpts of an interview:

What are Global Value Chains and how do they play a role in promoting international trade?

Value chains embrace the full range of value adding activities in a supply chain including research and development, design, input sourcing, processing, marketing, distribution, and customer support. In a global value chain (GVC), value addition happens across different geographical locations. In addition, a GVC is governed by a lead firm which is typically the final producer or buyer, but can also include first-tier suppliers.

Countries can now industrialize by joining GVCs without the need to build their own value chain from scratch. That enables them to focus on specific activities or tasks in the value chain rather than producing the entire product, thereby lowering the threshold and costs for industrial development. This has led to increasing investment and trade flows that are associated with GVCs. According to UNCTAD, foreign direct investment (FDI) net inflows were 34 times higher in 2013 than in 1980. And UN Comtrade statistics show that the share of low- and middle-income countries in global imported inputs (excluding oil) increased from 20 to 38% between 1995 and 2014.

What are the countries that have successfully integrated in Global Value Chains? What are the key drivers behind their integration in the Global Value Chains?

Today, we have a multipolar global economy with diverging performances and GVC integration. Although

East Asia, Central and Eastern Europe, Mexico, and parts of the Middle East, such as Morocco and Turkey, are increasingly integrated in GVCs, other parts of the world remain marginal, including most of Africa, South America, and South Asia.

How countries engage with GVCs determines how much they benefit from them. And while policy needs to adapt to a rapidly changing world, it remains valid that, for an effective and sustainable strategy of GVC participation, some areas of policy remain key. In order to enter a GVC, countries need to create world-class GVC links (e.g., FDI, connectivity) and a world-class climate for foreign tangible and intangible assets (e.g., business climate, domestic value chains).

Expanding and strengthening existing GVC participation requires countries to lever their position and achieve higher value addition through economic upgrading and densification. The concept of economic upgrading is largely about gaining competitiveness in higher value-added products, tasks, and sectors. Densification involves engaging more local actors (firms and workers) in the GVC network. Strengthening GVC-local economy links, absorptive capacity, and skills contributes to the overall goal to increase a country's value added that results from GVC participation.

What are the benefits for small and medium enterprises (SMEs) by integrating into Global Value Chains?

By integrating their domestic firms into GVCs, developing countries can help their economies industrialize,

become services-oriented more quickly, and move closer to their development goals. In particular, domestic firms can benefit from productivity spillovers in GVCs, especially those small and medium-sized enterprises (SMEs) that become suppliers to foreign firms. Foreign firms tend to require more or better inputs from local suppliers which increases their productivity. And foreign firms also tend to assist their suppliers, e.g., through sharing of knowledge/technology, including foreign-originated intellectual property; trademarks; operational, managerial, and business practices; and through offering training and advance payments, among others.

Not only SMEs that are directly linked to a foreign firms can benefit from GVCs. There is often huge untapped potential to link domestic suppliers that operate more upstream to a GVC, in particular those operating in services industries, such as transportation, logistics, information technology, and construction. However, this requires that domestic workers and suppliers are “up to the task”.

Do international trade agreements such as multilateral agreements or regional trade agreements play in role in promoting Global Value Chains?

A new GVC policy framework has emerged in which imports matter as much as, if not more than, exports and in which the flows of goods, services, people, ideas, and capital are interdependent and must be assessed jointly. Therefore, effective trade liberalization goes beyond the tariff rate on final goods. One effective route appears to be through “deep” trade agreements. A deep trade agreement is one that goes beyond simple tariff cutting and involves legal commitments on laws and regulations. Because deep integration often involves opening and leveling the playing fields in terms of investment, intellectual property and competition policy, participation in deep trade agreements seems to be an effective way to expand involvement in GVCs, as the new areas covered in these agreements facilitate the operations of complex production structures that span multiple borders.

What should national governments do to promote integration of their SMEs in Global Value Chains?

Since foreign firm characteristics shape the direction and extent of spillovers and linkages to domestic firms, the first strategy is to prioritize investments with

higher linkage potential. Governments need to recognize that the potential for creating FDI-local economy linkages and productivity spillovers differs by foreign firm characteristic, so a nuanced approach is needed to assess investment projects in terms of their linkage and spillover potential. This requires to establish a clear policy framework for linkage development.

Countries can also benefit from policies and regulations that specifically promote local linkages. This could include to target joint ventures in priority sectors which can be effective to access older technologies and know-how. And this could also include to design a specific supplier development program in public-private partnership which responds to investor demand (rather than being merely supply-driven), builds SME capacity (targeting the most promising suppliers), and is embedded in a comprehensive set of policies on linkages.

Finally, the potential for linkage development and spillovers can only be fully exploited if domestic firms have the necessary absorptive capacity. One major bottleneck is the skillset of the current and future workforce. Skills upgrading can be fostered by building joint training centers with foreign investors that offer a combination of training initiatives, but should not neglect capacity building of high-education institutions. Second, SMEs often face challenges to comply with international standards. Sequencing may be a suitable strategy where SMEs first serve the domestic market, followed by regional value chains, until they can comply with the standards required in GVCs.

Note

- The answers mainly draw on the following publications: Taglioni, Daria and Deborah Winkler (2016), *Making Global Value Chains Work for Development*, Washington, DC: The World Bank.
- Farole, Thomas and Deborah Winkler (2014), *Making Foreign Direct Investment Work for Sub-Saharan Africa: Local Spillovers and Competitiveness in Global Value Chains*, Washington, DC: The World Bank.

About the Author

Dr. Winkler has worked on issues of global value chains, export competitiveness, foreign direct investment, trade in services, offshoring, and their welfare effects. She is the author of *Making Global Value Chains Work for Development* (with Daria Taglioni), *Outsourcing Economics* (with William Milberg) and *Services Offshoring and Its Impact on the Labor Market*.

Linking India with Latin America and the Caribbean

Mr. Hugo Beteta

Director

Economic Commission for Latin America and the Caribbean (ECLAC) of the United Nations, subregional office for Mexico, Cuba, Haiti, Dominican Republic and Central America



Like India, Latin America and the Caribbean has increased its participation in global trade over the past years, responsible for 5.6% of global trade in 2016, compared to India's 1.9% (UN COMTRADE). Though the amount of trade between the two regions is still limited, it has shown impressive growth in recent years. For Latin America and the Caribbean, the United States continues to be the main trading partner, responsible for 39% of trade, and in 2016, India was in tenth place, with a share of only 1.6% of total trade. In reverse, Latin America as a whole is India's 4th trading partner, responsible for 4.6% of its trade.

For Latin America and the Caribbean, the export of natural resources and its derivatives makes up some 35% of all exports (down from 48% in 2012), and those to India are no exception. These are made up mostly of petroleum (46%) and soy products (16%). In the other direction, India's exports are more diversified and its principal exports to Latin America and the Caribbean consist of motor vehicles (32%) and organic chemicals (8%). The creation of value chains between the two regions can be envisaged in line with both regions' specialization.

In foreign direct investment (FDI), India is a much smaller player than one would expect for a country its size. In 2017,

the country received only 3.0% of global FDI (some 45 billion dollars), compared to an estimated 11.3% (or 172 billion dollars) for Latin America and the Caribbean (UNCTAD). Despite its smaller size and economic challenges in recent years, Brazil receives some 70% more FDI annually than India does. Indian FDI in Latin America and the Caribbean is relatively limited and concentrated in Brazil (26%), Panama (26%) and the Bahamas (25%) (Reserve Bank of India), where as vice versa, the principal FDI stock in India originates from Chile (30%) and Mexico (24%) (DIPP). Since many countries in Latin America and the Caribbean have regional trade agreements and agreements with third countries, such as Canada, the European Union and the United States, the region is an attractive location to companies in search of an export platform.



The currently weak commercial relations between India and Latin America and the Caribbean mean there is great potential for growth. ECLAC has identified several commercial opportunities, as well as some potential challenges. Starting with a challenge, it should be acknowledged that a great distance exists between India and Latin America and the Caribbean; not only a physical distance, but also a cultural one.

On the other hand, there are certain cultural similarities that have already offered opportunities for investment in the past. The Mexican love for cinema has helped to establish Cinépolis as a major operator of cinemas in its home country, and the firm has been able to capitalize on the realization that the Indian people has an ever greater love for film. The firm entered the Indian market in 2009 and reached 300 screens in 2017, aiming for 400 screens by the end of 2018. It is the largest foreign operator of cinema screens in India.

Amongst the opportunities that ECLAC has identified for potential cooperation and further growth in the commercial relationship are the following:

Latin transnationals look for opportunities in Asia. Latin America and the Caribbean is home to a great number of transnational companies that are exploring opportunities abroad. Some 81% of workers and 88% of sales of Mexican chemicals company Mexichem, for example, are abroad. Of the 100 most internationalized companies in Latin America, 42 have activities in Asia. Amongst those, Brazilian companies make up the lion's share, followed by those from Mexico and Chile. The most active industry is the food and beverages sector, followed by the services sector. The types of companies that have an open mind about seeking opportunities in Asia should be encouraged to seek out similar opportunities in India, if they are not already doing so.



Free Zones in Latin America and the Caribbean. At last count (January 2018), there are 333 Free Zones of different types in Latin America and the Caribbean. Some 35% are located in Central America, followed by Colombia (30%) and the Dominican Republic (16%), and in these countries, it is estimated that they are responsible for between 50% and 80% of exports. This means they form a great opportunity for foreign companies that are looking to use these countries as a platform for exports. The different Free Zones do not only offer great advantages with respect to taxation, but also tend to offer trade facilitation services that make investors' life easier.

The Commonwealth and the important Indian diaspora in the Caribbean. The Indian diaspora makes up a great portion of the population in Guyana (43%), Trinidad and Tobago (38%) and Suriname (27%), creating a strong cultural affinity, potentially fostering new trade links. Furthermore, 12 of the 53 members of the Commonwealth are located in the Caribbean, fomenting a potential relation that is based in similar legal and cultural values. While many countries in the Caribbean are relatively small, their total population amounts to close to 7 million people forming a potentially interesting market.

The agricultural sector. For both regions, the agricultural sectors plays an important role where there is great potential for South-South cooperation and

mutual learning. As an example, in the dairy sector, global production growth between 2000 and 2013 was around 32%, while production in Latin America and the Caribbean grew by some 39%. At the same time, however, Indian production grew by an impressive 70%, resulting in India producing approximately twice as much dairy as Latin America and the Caribbean as a whole.

Renewable energy. Renewable energy plays a giant role in FDI in Latin America and the Caribbean, especially in Brazil, Chile, Mexico and Uruguay. The region has great potential and is at specific risk of climate change, thus creating an incentive to invest in renewables. India is also a major player with great potential for greening its energy matrix. The two regions thus have great potential for further coopera-



tion, both at the national level and at the level of individual companies.

South-south cooperation. Finally, in a range of topics, such as health, aerospace and climate change, the two regions should support each other through South-South cooperation. India has transformed itself as an incipient donor of Official Development Aid (ODA), albeit with a focus on its immediate neighborhood until now.

Working cooperatively with Latin American donors may increase the potential impact that Indian ODA is having. Nevertheless, despite these different opportunities, there are several challenges to overcome. For example, both regions need to face their challenges with respect to business friendliness. One way this has been measured (Doing Business by the World Bank) is in

the cost of exporting and importing. While in India these costs are estimated to be around 442 dollars and 665 dollars respectively per shipment, they can be as high as 1625 dollars and 1900 dollars respectively in the Bolivarian Republic of Venezuela.

On the other hand, the cost of exporting a shipment can be as low as 90 dollars (in the Plurinational State of Bolivia) and of importing as low as 325 dollars (in Ecuador). Another challenge, especially for Latin America and the Caribbean is its limited connectedness. According to the McKinsey Global Institute, India is the thirtieth best-connected country in the world, ahead of all countries in Latin America and the Caribbean, with the exception of Mexico, which is ranked as the 21st best-connected country worldwide.

A final challenge worth highlighting is the limited depth of existing trade agreements between India and different countries in Latin America and the Caribbean. While several of these agreements are in place, especially with Chile and MERCOSUR, these agreements cover only a limited number of sectors and topics. Further deepening of these agreements would facilitate trade between the regions and would thus help to encourage the development of a productive relationship.

In conclusion, it is clear that India and Latin America and the Caribbean should be able to benefit greatly from a further integration of their economies. Opportunities exist in different sectors, but it will be necessary to facilitate the development of trade and investment relationships by reducing barriers to trade and facilitating future cooperation. Events such as the Global Economic Summit, as well as the India-Latin America and the Caribbean Conclave can help to facilitate such relationships and to overcome the different challenges that may be encountered.

About the Author

Mr. Hugo Beteta studied Development Economics in the doctoral program at the Massachusetts Institute of Technology, (MIT). He holds a Master's Degree in Engineering and a Master's Degree in Regional Planning at the University of Michigan In Ann Arbor. In 2007 he was recognized by the World Bank as one of the Top Ten Reformers of the Year, and in 2008 he was presented with the Isabel la Católica Order of Spain.

Creating An Ecosystem for Promoting Value Chains

Mr. Rajeev Kher

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Research and Information System for Developing Countries (RIS) and
former Commerce Secretary, Government of India



Modern industrial operations are carried out on the basis of relative competitive strength of nations in specific product segments. This happens over a period of time on the basis of material, locational, infrastructural and factor endowments of each nation. A policy framework is built around these endowments to facilitate production and trading in that product segment. A value chain gets created on the basis of these respective strengths of nations with respect to each milestone on the value chain. Thus a production process from end to end is distributed over several geographies.

Over the last several years since this paradigm evolved several nations through an organic process have found their niche bands of strengths on these value chains and taken care to maintain their competitiveness within those bands by a continuous improvement in technology, practice, financial engineering, regulatory reforms, skill improvement and so on. India has been a part of some of the traditional value chains such as Textiles, Readymade Garments, Footwear, Gems and Jewelry, etc. By common understanding India has skipped this process of locating itself on several other such chains in the modern industrial production at global levels. By all accounts manufacturing has not picked up despite several efforts in the recent past. While efforts are afoot to encourage and promote



manufacturing in India the results have not shown yet. This has also adversely affected India's capacity for exports which have remained stagnant in the last few years.

India's capacity in several areas with regard to delivery of services has improved and in some of these areas India is acknowledged as a significant player- IT and IT enabled services, Business and Professional services, R&D services are some examples. Services constitute significant part of modern value chains; therefore, India can leverage its strength in several production chains. Similarly, a reasonably sound base in Science education and Technology and Technical skills besides the demography and efforts on way for improving skill endowment, eminently position it as an important location for developing capacities on specific bands on

several value chains. But India is a late entrant in this game. While it has several elements going for it, some of them have been lost such as low wages. India needs to develop a conscious value chain-based framework to secure its position on them or in order to replace some of those nations who are losing their advantage for various reasons.

Since most countries operate on narrow bands on the

value chains they need to develop intensive capacities in respect to those bands that is they need to develop a complete frame work of policies around the identified bands. This would involve, specialized physical infrastructure and logistics capacities, policy framework for promoting and facilitating production and movement of relevant raw material, intermediates and the finished products from ports to factories and vice a versa, a conducive financial architecture, a non-restrictive technical regulatory framework at international level, a dedicated skill enhancement program, an innovation based IPR environment, a sound institutional architecture around the selected product areas and a tariff framework encouraging imports of raw material and intermediates for selected products. Correspondingly a vision for developing external commercial relations and an architecture for preferential rules and markets needs to be negotiated. In short, a microcosm of ideal production and trading environment for the specific identified product segments needs to be developed.

Countries in North-East and South-East Asia have by virtue of several considerations, including conscious policy frame works been able to find themselves on several stages in modern value chains. Significant operators in are Korea, Japan, China, Thailand, Taiwan, Hong Kong, Malaysia, Vietnam, Mexico etc. India because of its specific strengths finds itself on value chains such as textiles, leather, gems & jewelry, food products and electrical products. However, the policy discourse has not taken this development fully in stride. As a consequence, for many items there is a mismatch between government policy and industrial interest often reflected in cases of duty inversion, underdeveloped technical regulations, poor logistics, painful customs procedures and quarantine regulations, etc. Since in the new paradigm countries are becoming specialized in a narrow band of a product, value chain quantities and turn round time are of essence. There are more number of repetitions, greater amount of revenue creation and consequential repetition of compliance procedures.



While several infrastructure and logistics related practices are common to most products, there are some, particularly the latter, which are specific to selected products. It is in this context that India needs to identify specific value chains and bands on those value chains

where it wants to specialize and build its policy and regulatory environment and related industrial eco system to gain the competitive advantage over its other competitors. It also has a close relationship with technical standards and regulations around these technical standards besides, of course, the turnaround regime related to the specific products.

At the firm level micro level planning as enunciated above may be often resorted to but on a nationwide scale such comprehensive thinking is lacking. It has not been adopted in a comprehensive manner across the industrial policy. This is a complex and difficult task to perform but it is necessary and hand holding is required in the initial stage. This is a task cut out for the government both at the central and the state levels. Above all Industry needs to involve deeply in this evolutionary exercise. Since Medium and Small sector is going to play the primary part in this process they have to be supported at all stages of this evolutionary process. Accelerated reorientation of trade policies in major economies, rising protectionism, fast institutional development, potential plurilateralisation of international trade regime- all hint to the need for a rapid response from Indian stakeholder community lest we fall by the wayside.

(Views are Personal)

About the Author

Mr. Kher superannuated as Commerce Secretary, Government of India in 2015 after a career of 35 years in the Indian Administrative Service. He then worked as a Member in the Competition Appellate Tribunal for two years. His field of experience includes broad areas of International Trade and Commerce, Competition Law and Policy, Sustainable Development Policy, Environmental Management, Global Governance, particularly with reference to trade and environment and Decentralized Governance.

Trade With Purpose: Driving Positive Change at Scale

Mr. Christian Ewert

Director General, amfori (Foreign Trade Association)



The world is changing at a fast pace and more fundamentally than ever before. New and long-term global shifts such as in economy and politics will shape manufacturing in the coming decades and greatly impact the way companies and their global value chains operate. Businesses will need to continue supplying the world's needs whilst adapting to an uncertain landscape that also brings increased expectations when it comes to the sustainability of their operations.

The international community recently agreed to collectively strive for 17 Sustainable Development Goals (SDG) defined in the 2030 Agenda for Sustainable Development adopted in 2015. One year later, leaders from around the world committed to limit the rise of global temperatures by signing the Paris Agreement on climate change. These groundbreaking developments have also increased demands towards the private sector, who are now called to demonstrate their contribution to these greater objectives.

Against this backdrop, businesses have the opportunity to demonstrate the leading role they can play in delivering social, environmental and economic benefits for everyone. This is what we, at amfori, call trade with purpose. While companies can't achieve this on their own, together we can influence and drive positive change at scale. As the leading global business association for open and sustainable trade, at amfori we empower companies to succeed by creating the right policy environment and providing world-class tools that enable them to manage the social and environmental performance of their supply chains and anticipate trends.

Through both our social and environmental management systems, amfori BSCI and amfori BEPI, we help our over 2,000 members to protect, respect and remedy human rights and environmental issues. As part of these systems, we enable members to drive improvements in their supply chain through our high-quality **monitoring** tools, developed in line with international standards and best practice. The amfori BSCI Code of Conduct embeds the requirements of the

UN Guiding Principles on Business and Human Rights, the ILO Core Conventions and the OECD Guidelines for Multinational Enterprises, while amfori BEPI builds on the Global Social Compliance Programme (GSCP) Environmental Reference Tools and it is also aligned with leading environmental standards such as the Global Reporting Initiative (GRI). We **empower** our members and their producers to trade with purpose. The amfori academy offers a variety of trainings and resources that are updated regularly to keep them abreast of new developments. Building on our strong track record of advocacy, we have increased our **engagement** at a local and global level. We are focusing our advocacy on open and sustainable trade to create the conditions for companies to flourish and enable them to contribute directly to the Sustainable Development Goals. Lastly, through our network we provide **support** for all businesses wherever they operate. Our global reach means we can operate at scale, while still providing local, tailored support that is available in the member's own language. Our membership spans companies big and small, across all sectors and countries - we provide industry and geography-specific programmes, so that members everywhere can benefit from our and each other's' global knowledge and the opportunities that arise from collaborating.

We firmly believe in the pivotal role of businesses in leading the change and driving open and sustainable trade globally. Together we can respond to today's realities and be ready for tomorrow's.

About the Author

Prior to his role at FTA, Mr. Ewert worked as President and CEO of ICTI CARE Foundation, the International Council of Toy Industries' (ICTI) programme to promote social compliance in the supply chain producing for the toy and children's products industry. Christian previously worked as the Chief Operating Officer and Member of the Board of Zapf Creation, Europe's leading manufacturer of branded play & function and collector dolls and doll accessories.

Skilling and the Micro, Small and Medium Enterprises Industry



Mr. Jayant Krishna
ED & COO
National Skill Development Corporation (NSDC)

The Union Budget has once again reiterated the requisite for a robust micro, small and medium enterprises' (MSME) sector for the growth of the economy. With the escalating growth and reliance of the economy on the service sector, the MSME sector has become a prime focus for the government, especially when it comes to driving socio-economic growth.

Therefore, many government departments and ministries have started focussing on promoting, upgrading, modernising and even financing the sector. The Ministry of Skill Development and Entrepreneurship, the latest ministry formed by the Government of India, is also functioning to strengthen and support the MSME sector.

Skilling, the Catalyst of Growth

India is one of the world's fastest growing economy, expected to grow at 7.2 per cent in 2017-18, and at 7.7 per cent by 2019-20. Sustaining this growth momentum is the key challenge and it can only be achieved by making the best, most efficient use of the existing resources available to the country. It is in this direction that the government has charted out ambitious plans to transform India into a competitive, high-growth, high productivity middle-income country, through programs like Skill India, Digital India and Make-In-India.

For a developing country like India, the growth rate is dependent on skilling and upskilling the workforce of the country to bridge the skill gap in the economy. Prime Minister Shri Narendra Modi's Skill India envisions India as the skill capital of the world and skilling has become the centre of development. The nation has a huge demographic advantage with 65 per cent of the

population between the age group of 15 and 65. This favours as a huge resource, that once leveraged will ensure the country and its citizens grow exponentially, economically and socially, far beyond the pace we have grown so far.

Skill India Mission Empowering SMEs

Pradhan Mantri Kaushal Vikas Yojana (PMKVY), the flagship scheme of the Skill India Mission aims to provide skill training and certification to bridge the skill demand and supply gap. Potential employees of MSMEs in the country are being provided opportunities for significant up-skilling and re-skilling through both hard and soft interventions along with the provision of necessary infrastructure and equipment and tools.

MSMEs majorly consist of first-generation entrepreneurs and the key to their success is to ensure not only the skills required are up-to-date but also their competency to manage the staff or workforce along with a mentoring and support mechanism. This skill set has been carefully included in the curriculum of the Skill India program. Also, domain knowledge of best practices and opportunities, necessary assistance towards developing an entrepreneurial mindset and start their own enterprise is provided for a multiplier impact on the economy.

Along with entrepreneurship, the Ministry of Skill Development and Entrepreneurship is also working with many polytechnics and Industrial Training Institutes (ITIs) towards serving the manpower requirement of SMEs in rural and semi-urban areas.

The Skill India program has been designed to reach as many people and provide the necessary training as



For instance, the number of women getting skilled and joining the workforce is far from ideal. It is estimated that India can increase its GDP by 16 per cent if gender parity in the workforce is achieved. This is far too big a number to be ignored, especially for a trillion-dollar economy like ours. The Ministry has maintained a special focus on women and youth from rural areas, providing them an opportunity to re-skill and up-skill their existing skills.

Under the Pradhan Mantri Kaushal Vikas Yojana, about 15 lakh women have been trained and two lakhs have been oriented under RPL program. More than six lakh women have been empowered so far under the fee-based training. We have also had women represent the country at WorldSkills International Competition year on year and win laurels for us with their medallion of excellence. We are elated to see the enthusiasm in them and we will do everything under our capacity to empower them so that they can assist us in making the New India of our dreams.

effectively as possible, ensuring that the trained are able to get the right jobs and opportunities for attaining a better livelihood.

Making an Impact

More than 12 million youth between 15 and 29 years of age are expected to enter India’s labour force every year for the next two decades. The government’s recent skill gap analysis concludes that by 2022, another 109 million or so skilled workers will be needed in the 24 keys sectors of the economy, while another 289 million will need upskilling. This is yet another reason why the entrepreneurial mindset is key.

There are major challenges that the government is trying to overcome for the inclusive growth of the economy. The diversity in the country, across language, religion, income, caste, gender, geography, etc. has made it difficult to put together skilling programs where one size fits all. Each diverse condition needs to be addressed individually and each program customised accordingly. Thus, socially and economically marginalised sections, religious minorities, differently-abled people, women and transgenders are particularly brought into the fold with affirmative actions.

Every challenge is being tackled head on with meticulous thought and precision. It is only a matter of time before we are successful in our mission, as we direct the workforce towards the better livelihood and respect in society. We steadily navigate all choppy waters that may come our way through valuable partnerships and the trust bestowed upon us by the public and industry.

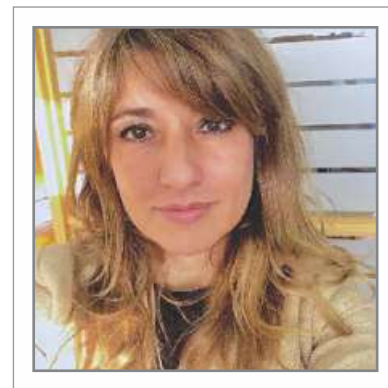
About the Author

Mr. Jayant Krishna brings an overall industry experience of over 29 years. He has been very actively contributing to India’s Skill Development sector, especially since early 2011. Jayant championed the cause of apprenticeship reforms for the Indian industry. He was actively involved with the Ministry of Skill Development & Entrepreneurship (MSDE) in the implementation process of apprenticeship reforms to fast track its nationwide roll-out. He has also been contributing as the Chairperson, Special Taskforce on Apprenticeship Rationalization, MSDE. He is also a Member, MSDE’s Special Committee which has been set-up to examine and recommend options on Sector Skills Council (SSC) Optimization. Jayant had earlier contributed as the co-convenor of Government of India’s erstwhile Planning Commission’s Task Force on Enhancing Employability in India. Previously, he was also involved in the evolution of the National Skills Qualification Framework. He was also involved in several steering committee meetings at the Planning Commission for formulation of India’s 12th Five Year Plan. Jayant also evangelized several rigorous faculty development programs for ITI & Polytechnic Principals and faculty members.

Chile's Engagement and Approach to Global Value Chains

Ms. Viviana Araneda

Head - Global Value Chains Division
General Directorate for International Economic Relations
Ministry of Foreign Affairs, Chile



It goes without saying that in the last two and a half decades, Chile has achieved a significant integration into global trade, which for a small economy is of the utmost importance, considering that between 1990-2016, international trade accounted for an average of 63% of Chilean GDP¹. The latter explained in great part by the country's strategy on trade and investment liberalization and integration into international markets, which has led to the successful signing and entering into force of 26 agreements, covering 64 markets and representing close to 85% of global GDP. Proof of Chile's external expansion is the fact that in 1990, participation in global markets reached 0.23%, in comparison to what can be seen in 2016 where Chile holds a participation of 0.37%, which represents a hike of 61%. This is of no minor importance considering the size of the Chilean economy, as well as its geographical and physical challenges.

Nevertheless, the high degree of specialization built on Chile's natural resource endowments has opened the Chilean economy to external shocks, and according to the OECD, to some extent has held back development of innovation-intensive activities. This situation has brought about the same ambition that led Chile to the forefront in terms of the negotiation of Free Trade Agreements (FTAs) during the past two and half decades, thus triggering a revision of Chile's approach towards trade policy, including the role of global value chains (GVCs).

In terms of Chile's participation in

GVCs, according to the OECD,² on aggregate, Chile's integration into GVCs is mainly upstream. Evidently, since Chilean exports are concentrated in primary and intermediate products, forward GVCs participation is relatively high (32% of total gross exports) and backward GVCs participation is fairly low (20% of total gross exports). It is important to mention that Chile registers some of the highest levels of GVCs integration among South American economies that are represented in the OECD TiVA³ database.

In this context, in July of 2016, the General Directorate for International Economic Relations of the Ministry of Foreign Affairs of Chile (DIRECON), formed the GVCs Division, headed by Mrs. Viviana Araneda and a small team of economists. Its main objective is studying and proposing new insight in terms of trade policy strategies, that would allow Chile to enhance its insertion into GVCs, this considering the new global scenario, which is characterized by elevated degrees of economic volatility, new approaches to trade integration



Santiago, Chile

¹ World Bank Group.

² Diagnostic of Chile's Engagement in Global Value Chains, 2015, study commissioned by the General Directorate for International Economic Relations of Chile (DIRECON).

³ Trade in Value Added.

through the negotiation of mega-regional agreements, that seek to foster the development of GVCs.

Since its creation, the GVCs Division has strived in the implementation of its mandate, the latter reflected in the adoption of different strategies that seek to improve Chile's position within GVCs, where the following can be highlighted:

- Successfully including the issue of GVCs in the recent FTA between Chile and Argentina, the modernization of the FTA with China and the new Comprehensive Agreement with Indonesia. Additionally, we are currently working on the process of the deepening of the FTA between Chile and the Republic of Korea and the modernization of the Association Agreement between Chile and the European Union.
- The creation of an Inter-Ministerial Committee, led by the GVCs Division, with the aim of working on public-public cooperation and coordination, in order to foster the necessary gravitas in the design and implementation of public policies. During 2017, the Inter-Ministerial Committee has worked on the document "Challenges and Opportunities in Public Policies in GVCs," which was recently made public through DIRECON's Website, in accordance to the Government of Chile transparency policies.
- We have also prioritized the work with the private sector, through the recent creation of the Public Private Initiative on GVCs, which seeks to bring together the whole spectrum of stakeholders in search of strategies that span beyond single government policies, but expand into state policies regarding GVCs. Twenty-eight representatives of the private sector associations are currently participating in this initiative.
- Supplying capacity building on the issue of GVCs to other countries within the region, such as Argentina, Paraguay, Guatemala, El Salvador, Belize and the Dominican Republic. All these activities are an important priority in our work toward supporting regional integration within Latin America.
- We have been playing an active role within the framework of the Bio-Oceanic Corridor, that is an initiative that intends to unite the Atlantic and Pacific Oceans through a network of infrastructure projects, as well as logistical and trade facilitation agreements that span four countries: Argentina,

Brazil, Paraguay and Chile. This initiative would serve as a platform to create greater levels of regional trade and integration, as well as greater levels of synergies towards furthering the participation of these four countries within GVCs.

- The work of the GVCs Division has also focused on the development of supply chain studies with Paraguay, the Dominican Republic, El Salvador, Guatemala, Colombia, Peru, and Mexico. Additionally, the GVCs Division has undertaken similar studies with the Argentinean provinces of Salta, Mendoza and Neuquen. These studies seek to identify potential products that can be imported from one of the parties, for it to undergo certain transformations and then exporting it to a third party, complying with the established rules of origin, thus taking advantages of the favorable terms of market access that Chile has, given its extensive network of FTAs.

Port of Valparaíso, Chile



Taking into consideration what has been expressed through the extent of this document, it is evident that the Chilean Government is fully engaged in seeking ways to further enhance our position within GVCs. Not only in terms of the work already undertaken, but with the necessary foresight to take our achievements and consider them the groundwork for the better design, coordination and implementation of public policies.

About the Author

Ms. Viviana Araneda is an economist (University of Chile) and holds a master's degree in Environmental Management (Yale University). She has more than 15 years of experience in international trade and environment. In her current position she is in charge of the design, promotion and implementation of trade policies related to the insertion of Chile in Global Value Chains. Her responsibilities include, among others, coordination with Government agencies, private sector, think tanks, academia and civil society.

Global Value Chains: Changing Dynamics in an Automated World

Dr. Abhijit Das

Professor and Head, Centre for WTO Studies
IIFT, New Delhi



The prominent role of global value chains (GVC) over the past few decades has been extensively documented and reasonably well understood. However, there is little empirical evidence of how GVCs may get affected by the emergence and gradual assimilation of disruptive technologies in the production process. Nevertheless, as discussed in this brief article, some pointers do exist.

Increasing automation in the manufacturing process, coupled with the use of robots and widespread adoption of 3-D printing in some sectors, has the potential to change GVCs in fundamental ways. These changes would impact the economic operators across the tasks that constitute a GVC. This would also have implications for growth, income generation and employment creation in developing countries.

First, enhanced automation will reduce the salience of labour wage arbitrage as a determinant of fragmentation in manufacturing in dispersed geographical locations. This would have far reaching consequences. There may be lower incentive to locate manufacturing segments of GVCs in developing countries with low wages. Consequently, one of the main gains for developing countries from GVCs - employment generation - would take a massive hit.

Second, with wage rate differential across countries shrinking, automation may pull manufacturing back into the developed world. There may be other factors as well that could hasten this trend towards re-shoring. Third, after manufacturing using 3D printing becomes less novel and more wide-spread in many sectors, the final production may be located where the markets exist. Manufacturing would become less distant and more local. Not only would this further accelerate re-shoring, it would also reduce the relative importance and role of transportation, warehousing, inventory management and other aspects of logistics in GVCs.

Fourth, manufacturing using 3D printing would render one of the bedrocks of GVCs- production and international trade in parts and components - almost anachronistic. This would also eliminate the use of machine tools, molds, jigs, fixtures and gauges in GVCs.





both these changes are, would determine the extent of their impact on GVCs. To illustrate, the impact on GVCs would be rather moderate, if 3D printing is confined to just a handful of sectors. On the other hand, the impact would be almost ground-breaking, if 3D printing permeates almost all the manufacturing sectors.

Overall, increased mainstreaming of disruptive technologies in the production process is likely to disrupt many facets of GVCs as we know them today. Many of the activities, which were outsourced and off-shored earlier, would be brought

Fifth, with significant shift in relative salience of tasks in the GVCs, distribution of incomes generated from GVCs is also likely to undergo important changes. While at this juncture the exact nature of this change would be a matter of speculation, it is likely that developing countries with small markets may be adversely impacted.

home. Decentralised production may eventually become a remnant of the past. Some of the tasks associated with GVCs may even vanish altogether. Manufacturing is also likely to witness a revival in at least some sectors in the developed countries. Many developing countries, which prospered on the back of the GVC wave, may suddenly find that the pot of gold at the end of the rainbow no longer exists.

(Views expressed are personal).



About the Author

Dr. Abhijit Das has almost two decades of experience in international trade, including five years in the Government of India. He has participated directly in many multilateral and bilateral trade negotiations. He worked in UNCTAD India Programme during 2005-10 and headed this prestigious UN project for three and a half years. He is a regular commentator in the media on issues related to WTO and international trade.

At the invitation of international organisations and governments, he has been a speaker on WTO issues in more than 20 countries. He has been a member of India’s official delegation for five WTO Ministerial meetings.

Sixth, the share of services provided digitally in various tasks of the GVCs is likely to increase significantly. Countries that specialise in these services would garner significant gains in the future.

An important caveat is in order. The pace of automation and adoption of 3D printing, and how pervasive

Integration of Indian SMEs into Global Value Chains - Challenges and Opportunities

Ms. Ankita Dash

Doctoral Student, Department of Economics and Social Sciences, Indian Institute of Management Bangalore (IIMB)



Global Value Chains (GVCs) are the new reality of global production and trade. As businesses gain from the comparative advantage offered by different geographies through international operations, GVCs are here to stay. Rising trade in intermediates has made GVCs central, especially in production-centric industries like Automotives and Electronics. Though highly desirable, India's presence in GVCs is yet not substantial, especially in manufacturing sectors. For India, Net Domestic Value Addition (DVA)¹ of certain sectors like primary activities (Agriculture and allied sectors, Mining and quarrying) and Services has always been high (76% and 88% respectively for 2011²). In Manufacturing, certain sectors like Food processing (87.86%), Textiles & allied sectors (80.2%), Chemicals (71.4%), and Rubber & plastic products (73%) also have a fairly high DVA. However, certain other manufacturing sectors like Transport Equipment (68%), Machinery & equipment (67%) and Electronics (68.8%), which despite being extremely significant for the domestic economy, do not feature as prominently in terms of India's GVC participation.

In order to achieve the goal of increasing the share of manufacturing in the country's GDP, India's domestic value addition in manufacturing needs to go up considerably. While developing manufacturing intensity will require some time before it yields results (since typical manufacturing sectors have long gestation times for projects to be set up and become operational), partaking in global value chains with existing capabilities is a practical tactic to harness

present abilities of firms in India. The obvious first step is to understand the whys and wherefores of this low level of participation and recommend pertinent policy alterations to reverse the trend.

A brief snapshot of some of the major factors affecting participation of firms in India³, especially SMEs, in their sectoral GVCs is detailed below which includes a gamut of factors ranging from institutional, economic, legal, financial, infrastructural and regulatory factors.

a) Size, indicative of a firm's potential to achieve economies of scale, access to resources and ability to undertake risks, is a major deterrent to participation in sectoral GVCs. Combined with the ownership structure (fully Indian ownership), SMEs place an uphill task of amassing resources (like credit, technical know-how, access to technology and better management practices, etc.) that could make their entry into GVCs relatively easier. One possible tactic to combat this handicap is through agglomeration where clusters of firms producing similar kinds of products (firms in the same segment of GVC) make use of the common resource pool like skilled labour and infrastructure. Group bargaining power could potentially overcome shortcomings of size and finance.

b) Market Barriers posed due to the nature of the industry and the end-market have a highly negative impact on participation in Electronics and Automotives GVCs. High market entry costs, high capital costs and long gestation time of projects are

¹ So far, there is no concrete measure/index of extent of a country's participation in GVCs. However, the extent of Domestic Value Addition (DVA) in a sector is a fairly decent proxy for a country's contribution to that sector's GVC.

² Source of DVA for India: TiVA Database for 2011

³ Joint study on GVC participation by firms in India in Automotives and Electronics sector by IIM Bangalore and Centre for WTO Studies (IIFT), New Delhi was undertaken by Ankita (Doctoral Student, IIM Bangalore) under the supervision of her guide Prof Rupa Chanda (RBI Chair Professor, Dept. of Economics, IIM Bangalore).

the major contributing factors to market barriers. Both these sectors are highly capital-intensive as they require large scale investments, right from setup to running operations. In addition, the end-market (domestic or global) that these cater to are also highly dynamic, hence demanding constant innovation and upgradation. Firms unable to meet the challenges posed by this constant flux find it hard to enter and/or survive in global value chains. The most potent method of meeting the demands of such highly fluid markets is to be party to cutting edge innovation (either directly by investing heavily in research and development (in-house or in a group) or to have access to the latest innovations through partnerships).

c) Amongst the financial factors, cost of credit (interest rates), access to credit (ease and quality), the exchange rate and taxes are considered to be the most important factors affecting participation negatively. The high cost of capital (borrowing rates) for firms has impacted their ability to invest in long term capacity building and hence the industry's participation in global value chains, especially in the face of tough competition from global firms which have the relative advantage of access to cheaper capital (mostly enabled by the Governments at home). Access to formal credit also remains a challenge to most firms (mainly SMEs) since it requires extensive paperwork on information about the firm and collaterals, which these firms find difficult to obtain/meet. The financial creditors are normally predisposed to lend to firms with good credit history and first time applicants usually find it harder to get higher corpus of loans at competitive rates. Taxes, especially Service Tax, State VAT and Central Excise Duty, have high incidence and are a major share of the cost burden on firms. The hope is that with the advent of the Goods and Services Tax (GST), the distortions due to different sales tax rates in different states and the complexity of inter-state sales tax will be done away with, though concerns remain regarding the implementation details and input tax credit procedures.

d) Transparency of public institutions and dispute resolution mechanisms are essential institutional factors affecting participation of firms. Public institutions need to be organized, predictable, open and accountable in their dealings with firms in order to instil confidence in domestic and foreign investors. Dispute resolution regarding business collaborations, intellectual property rights, tax-related issues, WTO

related matters, etc. needs to be fast, efficient and affordable. Fast track courts, mediation (instead of litigation), online approvals, quick-clearance one-stop windows by Governments are a few measures that have helped businesses setup and operate. But more such measures which improve the ease of doing business are required as institutional factors have a significant impact on the ability of firms to participate in GVCs.

e) Infrastructure and Labour laws have the most negative impact on participation in sectoral GVCs. Archaic and restrictive labour laws governing hiring, layoffs, wages and minimum operational environment have made the workforce composition skewed towards contractual labour which has actually started to turn counter-productive. While State laws on promoting electronics and automotive manufacturing through provision of excellent infrastructure have been ideally made on paper, they lack severely in implementation. The most common grievance of most firms is the lack of provisions for basic infrastructure like good road/rail connectivity and access to 24x7 power and water.

To sum up, while participating in GVCs exposes domestic firms to the vagaries of the international economy, it also improves their efficiency, competitiveness and productivity. To compete and survive on a global platform requires substantive improvement and fortification of both internal and external resources. The Government remains a significant facilitator of participation in GVCs and can do so by addressing macro-level issues (domestic laws, trade agreements, public institutions, etc.) and micro level assistance in the form of financial incentives (including credit and tax breaks), access to technical support, basic infrastructure development and skilling of manpower. To make "Brand India" an internationally well-known name (for ease of access to foreign markets, potential clients and investments), remedial steps need to ensue immediately.

About the Author

Ms. Ankita Dash is currently a doctoral student at IIMB. Trained as an engineer, with an MS in Electrical Engineering from University of Maryland College Park (USA), she is pursuing her PhD in International Trade under the guidance of Professor Rupa Chanda at IIMB. Her area of research focuses on Global Value Chains and India's presence in GVCs - Opportunities and Challenges. Her areas of interest lie in International Trade and International Macroeconomics.

The Ship Broker, The Ship Agent and The Global Value Chain



Mr. John A. Foord FICS

President

Federation of National Associations of Ship Brokers & Agents (FONASBA)

Having been a ship agent for much of my working life and, as the current President of FONASBA, the international representative body for ship brokers and ship agents, it is perhaps not surprising that I believe these two little known - and often even less well-understood - professions are as integral to the success of global value chains as are many of the better known participants such as the major shipping lines, ports and the logistics service providers. The contribution of ship brokers and ship agents to the effective and efficient movement of goods by water is without doubt far greater than they are given credit for.

Outside the containerised liner trades (which I will cover later) it is the ship broker that brings the vessel and the cargo together. Without his or her knowledge, experience and contacts, arranging the transportation of everything from raw materials to finished components would be so much more time consuming and expensive. They are also engaged in every aspect of the global maritime transportation chain, from contracting for the vessel to be built, through buying and selling them on the second-hand market, chartering them throughout their working lives and finally, selling them for scrap.

Ship brokers come in all shapes and sizes, from small and often very specialised brokers working niche markets to the globally recognised companies such as Clarksons, Simpson Spence & Young and Galbraiths employing thousands of people in offices across the world.

Whether the broker is a one or two person operation working in a small, sometimes local market, or a multinational covering the full range of shipping markets as well as providing additional services such as research and analysis, they all bring professionalism, many years of knowledge, expertise and a wide range of contacts to the business they conduct on behalf of their principal.

The ship agent is at the very centre of the ship/port interface and is responsible for organising every aspect of the port call, from planning the schedule in conjunction with the operator and the port and the service providers, to ensuring that all the statutory reports are provided to the right authorities in the right format and at the right time.

Certainly for tramp vessels, which may only call at a particular port once in many months or even years, the



Master cannot be expected to know with whom he should be communicating in order to put all the necessary arrangements in place. There may also be language and cultural issues to take into account and this is where the agent comes in.

Acting primarily for the master and owners or operators of the vessel (although the agent can also act for other parties) the port agent takes on the role of local representative, contact, fixer and go-between.

Maintaining seamless communication between the ship and the shore to ensure that all the requirements and obligations of both sides are discharged efficiently, effectively and in accordance with all relevant rules, regulations and timelines are all aspects of the agent's task. They will guide the master through the detailed process of generating and lodging the paperwork necessary to comply with all the obligatory reports to customs, immigration, port health and security.

At the same time it is necessary to ensure that all the port services, such as tugs, pilots and mooring gangs are available at the right time to ensure the vessel does not incur any undue delays. Liaison with the stevedores or terminal operators and other cargo handlers is also vital to ensure the loading and/or unloading operation is undertaken as efficiently as possible and the cargo brought to, or taken away from, the port by the most effective means.

In addition to the operational obligations, the agent fulfils a vital role in providing human contact and support to the Master and the crew, ensuring that their personal, domestic, medical and spiritual needs are met and that crew changes are handled efficiently.

The steadily reducing amount of time a vessel spends in port continues to limit the opportunities for the crew to interact outside their own small on-board community and the services of the agent in enabling the crew to attend the local seamen's centre or other similar shore-side facilities are vital in ensuring their continued health and well-being.

The agent's extensive knowledge of port procedures, local customs and practices and their knowledge of the local shipping sector in general will all be placed at the disposal of the Master and the owners/operators to ensure that at all times they are aware of what is going on and are best advised how to deal with any issues

that may arise. Once the port call is over, the agent will also attend to any outstanding issues, agree and settle the accounts, deal with any claims and finally send his invoice to the principal.

Outside the direct port agency function, and most commonly in the liner trades, agents will take on the additional responsibility of canvassing, and securing, cargo for the liner operators. The provision of inland transport and other logistics services are also part of the agent's value added service provision. Again local knowledge and experience is key.

A good liner agent will be in contact with importers, exporters and transport operators in the vicinity of the port - and often beyond - will be aware of their shipping needs and thus be ready, and able, to offer them effective and appropriate multimodal solutions to their transport and logistics requirements. The agent will also work closely with logistics providers and freight forwarders and be aware of the services they provide in order to guide the customer correctly. As well as providing a service to local importers and exporters the liner agent also supports the port by encouraging and attracting shipments and thereby increasing trade through it.

There have been ship agents for almost as long as cargo has moved by sea and in spite of developments in technology we expect to be around for a long time yet. So long as there are people involved in the shipping industry, and there are rules, regulations and procedures to be complied with, the ship broker and ship agent will continue to play a vital, central and pivotal role in bringing the ship and cargo together, coordinating the ship/port interface to ensure it operates smoothly and effectively so that cargo keeps moving on our seas and along the global value chains.

About the Author

Mr. John Foord has spent all of his working life in the shipping industry, both at sea and ashore. He started his career as a foreign-going officer and after coming ashore joined the ship agency sector as a representative of both liner and tramp owners. John has been involved with the container shipping industry since the mid 1970's, beginning in vessel operations and stowage coordination for a number of major Far Eastern carriers. Since then he has gained senior management experience in the container trades, from the perspective of both the carrier and the agent. John is therefore very familiar with all aspects of global liner transport. In addition to his practical experience, John has also played a significant role in promoting the ship agency sector in the UK and internationally.

Progressive FDI Policies to Integrate MSMEs in Global Value Chains

'100% FDI in SBRT; 49% FDI in MBRT; 30% Local Sourcing'
What does this all mean to the 92% unorganised retailers in India?

Ms. Madhumitha Ramanathan
Assistant Vice President, Invest India



The advantages and disadvantages of opening the borders for foreign retailers to establish their stores in India have been debated at length. The advantages outlined are benefits of having an organized retail sector, healthy competition, quality control and waste reduction. Counter arguments include disadvantages of higher prices with higher inflation, limited job creation etc. But the biggest threat perceived is that the millions of *Kirana* stores will be forced to shut down, unable to compete with the foreign giants.

In my family, I am the third generation buying from the same local Kirana store. Keeping in mind my current profession as Principal Investment Specialist at Invest India, I think there are more advantages with FDI in retail.

The world is witnessing the biggest human migration today - 30 people are moving from rural to urban India every minute! The middleclass population is on the rise - 550 million by 2025. India is expected to have a \$3 trillion consumer market by 2025. This provides a huge array of opportunities for the co-existence of the unorganised and the organised sectors. Also, there are various ways through which the organised sector can help the unorganised sector grow. Below are a few examples.

Integration into the Global Value Chain

A lead firm contracts many smaller local businesses to supply it with construction, transport, cleaning, manufacturing and other services. A big retailer like Walmart, needs space to build its warehouses and needs people to manage its warehouses, distributions centres, and staff to ensure best of consumer services. All these naturally generate employment. Discussions with top domestic and foreign retailers reveal that an organized sector leads to 1:8 direct to indirect employment and that for every 300-sq. ft. of retail space 1 person is employed.

As an illustration, 10 retail companies being facilitated by Invest India have already created 171,055 direct jobs and 705,950 indirect jobs. A person who might



have lost a job as a delivery boy in a Kirana store now may hold a full-time job in an MNC, being part of a company's payroll. This automatically draws the other benefits of health insurance, overtime pay etc.

Some examples of how MNCs are helping the unorganised sector in India are:

Amazon's Project Udaan: Amazon.in appoints offline associates across retail points like kirana stores, medical stores, and mobile shopping outlets and provides them a PC-based website. The store owners are trained to help customers find and buy products of their choice while earning a commission in the process. The project operates with 2429 stores across 267 cities in 20 states.

Walmart's Model 'Mera Kirana': Shares best practices with members who are SME retailers, and advises on various aspects of using low-cost modern techniques and processes such as assortment planning, layout and fixtures, safe food handling etc.

IKEA's Disha Program: Touches the lives of 1 million women over a period of 3 years by providing the knowledge and skills to start their own business.

Apart from big players, start-ups are also seen helping the Kirana stores to become more organised.

An article in yourstory.com introduced me to Nakkyun Chong from South Korea, who worked with SK planet before (a subsidiary of SK Telecom). He introduced **Kirana 11 in Bengaluru** which follows a hybrid model of B2B2C and Hyperlocal. The start-up connects Kirana stores to customers and distributors and helps small sellers adopt digital solutions to their shop management. A hyperlocal model in retail is about getting the ordered products from local stores and delivering it directly to the customer. Consumers can place an order from a Kirana store on Kirana11's website or app.

The entire planet becomes a market for an artisan in the rural village of India to sell her crafts!

A craftswoman weaving a shawl from a loom in the North-East could only supply her product to a neighbourhood market or a middleman. But with the introduction of e-commerce, the craftswoman has

overnight become an online seller and the world is her oyster. Whilst a Flipkart reaches her product across India, an Amazon or an E-bay reaches her product across the globe!

The online marketplace not only gives her the global outreach but also the necessary marketing and branding that her product deserves.

Today, on an average, 45% of the sellers to the MNC retailers and online marketplaces are SMEs or from Tier 2 and Tier 3 cities in India.

With the benefits indicated, the current FDI policy may be enhanced with 100% FDI in E-Commerce in an Inventory Based model for products that are made in India exclusively.

A farmer gains 10 times in earnings through direct sourcing!

India today suffers from an inefficient supply chain. Too many middlemen, high priced logistics and lack of a proper supply chain make a farmer reap very low profits. As an example, sourced from the CEA of Rural Development, a tamarind farmer used to get Rs. 8 per kg of tamarind sold for which a buyer paid Rs. 170 per kg. A mere 5% of what the consumer paid reached the farmer.

With Dabur deciding to make seedless tamarind for the consumer, the bulk of the tamarind was directly sourced from the farmer. **With the reduction in middlemen and faster movement of goods, the farmer now receives Rs. 80-90 per kg for the Rs. 170 per kg that the consumer pays for a superior product of seedless tamarind.**

Tens of thousands of farmers sell directly to MNCs such as Pepsi, Hindustan Unilever, Nestlé etc. Farmers are reaping huge profits from 100% FDI in the food processing sector. Based on which 100% FDI in Food Retail is a reason to thoroughly support. Allowing the sale of 25% of non-food items in a food retail store will be a matter of convenience for the consumer. A policy change that would be welcomed by the foreign investors as well.

Today, most SBRTs and Multi Brand Retail Traders (MBRTs) are comfortably meeting the 30% local sourcing requirement, and have even achieved up to 60-70% local sourcing in sectors such as textiles.

A Kirana store did not shut down with a Waitrose outlet next to it.

A Nilgiris outlet (now Waitrose) opened in my locality a decade ago where a Kirana store has been existing for over three decades. Did the *Kirana* store run out of business? The answer is no and today both are doing equally well.



As a consumer, we have two major types of shopping. A one-time shopping of monthly provisions and the second type of picking up one or two items of interest during the month. The monthly provisions are mostly sorted from the *Kirana* store. This could be attributed to habit or convenience of not manually picking up the long list of items from the store or low price of non-branded items like toor dhal and boiled rice. But during the month when we want a family pack ice-cream or the need for a branded personal care product, then it's a quick halt at the Waitrose outlet.

A report from BCG indicates that whilst organised retail grew by 933% in a decade - US\$6 billion in 2005 to US\$62 billion in 2015, the unorganised sector grew by 177% (US\$202 billion in 2005 to US\$560 billion in 2015). It is also projected that by 2020 whilst the organised retail might grow at 190% reaching US\$180 billion, the unorganised sector is expected to grow by 60% to US\$897 billion. So, in effect, the pie is just getting larger from US\$208 billion (in 2005) to US\$1.07 trillion (in 2020) for more players to equally succeed and profit from.

Bearing witness to this increasing pie - a locality that had independent bungalows with 500 families, over the decade has been infested with apartments with over 1500 families in the locality! This calls for more supply to meet the demand.

The increase in footfall has also helped small vendors to establish their business next to the Waitrose outlet.

At the parking lot - a lady vendor successfully sells her basket of jasmine flowers and betel leaves every evening. A young lad makes his daily income attracting the youngsters with his panipuris.

FDI in retail, as seen in economies such as China and Thailand, has yielded multiple benefits. Direct sourcing, gainful employment, infrastructure upgrade etc. - leading to Inclusive Growth: Parallel growth of the organized and the unorganized sectors.

As to allowing 100% FDI in MBRT, I feel we need to give time for the sector to mature. We need to build a stronger local competition, build better infrastructure, build a more efficient supply chain which will then help us open up MBRT to 100% FDI.

The success of FDI in retail in countries such as China, Thailand, and the Philippines have positive learning lessons for India, giving us confidence in the recent easing up of FDI norms as announced by the government.

About the Author

Ms. Ramanathan is Assistant Vice President Invest India, the national investment promotion and facilitation agency of India. In her role as Assistant Vice President in Invest India, she is responsible for leading investor relationships.

Ms. Madhumitha has worked in financial services across investment banking operations including Equity Trading, IPOs, Trader Surveillance, P&L management, Funding Projections, and Securities Inventory Management.

Her last role in corporate was Vice President, Goldman Sachs, where she was responsible for Equity trading middle office operations managing financial markets across Europe, Middle East, Africa and Asia excluding Japan.

Ms. Madhumitha has an MBA degree from the University of Oxford, UK.

Finance in the Global Value Chain - Emerging Market SMEs are losing out



Mr. Tim Nicolle
Founder & CEO
PrimaDollar Group, London

Emerging market SMEs are losing out in the fight for business within the global value chain because of unequal access to finance. Trade finance companies offer a potential solution. This short article sets out some of the trends and explains how trade finance solutions can be developed to boost SME suppliers across South Asia.



What is going on?

The global value chain converts raw materials, labour and capital into finished products that consumers buy. But in recent years, the rules of the game have been changing.

A number of factors are creating important shifts in the way that products are being sourced with implications for the structure of emerging market economies. Here are four trends, amongst a number, that we might highlight:

1. Efficient markets: pricing pressure

The internet has increased price transparency and the ability of consumers to shop around. Price transparency has led to increased pressure on margins and a diminution in customer loyalty. Consumers demand a high quality product at a price which offers value. They can easily test any price in the market for value, and they do. So price is becoming an ever more important consideration in sourcing, leading to changes in the way that supply chains are being operated.

2. Banks are under regulatory pressure: finance is less available and is less flexible

Increasingly banks are finding it harder to work cross-border and to deal with customers that they do not know well. Fines for non-compliance can wipe out decades of profitability in transaction banking. Many banks are withdrawing from markets

or declining trades that ten years ago they would have easily executed.

This is leaving large gaps in financial support for the global value chain, just at a time when many buyers find that their cash flow is under pressure and SME suppliers are struggling with cash flow issues.

3. Supply chain as an asset

Many retailers understand that their supply chain is one of their biggest assets, and a significant contributor to profit. This understanding changes the way in which responsible retailers work with their suppliers. This is leading many larger buyers to develop supply chain finance programs intended to provide financial support to the supply chain; this is to ensure it is efficient, stable and can work with deferred payment terms.

Supply chain finance programs, once implemented, lead to wholesale changes in trading terms, which many retail buyers seek to apply across their supply chains.

4. SMEs in emerging markets are finding it harder not easier

But SMEs are getting squeezed by these trends. Supply chain finance programs often do not address the needs of emerging market suppliers very effectively. Funds are available, but typically too little and too late. An emerging market supplier has usually borrowed local funds to support the purchase of materials and to pay wages; the SME supplier needs to be paid before shipment (to clear pre-shipment finance) and not 30 or 45 days later when invoices are approved by the buyer's finance department.

Moreover, the finance providers behind these supply chain finance programs (usually banks) are often unwilling to on-board smaller suppliers who are located in "in hard to check" locations (the so-called "long-tail problem" in SCF).

Traditional trade finance solutions, such as letter of credit, are expensive and buyers are unwilling to provide them, especially if they have a supply chain finance solution in place.

This leaves SME suppliers largely unsupported and unable to compete with better capitalized suppliers who can live with the new financial realities.

There are a number of implications of these trends - and there are considerations for both ends of the global value chain. PrimaDollar works with suppliers across South Asia serving international buyers. In many countries we can see business consolidating in the hands of the larger suppliers at the expense of SMEs (who move into sub-contracting). This is driven principally by unequal access to finance. Without a thriving SME sector, wealth will not trickle down efficiently and economic growth is unlikely to be maximised.

Solutions are available

There is a new breed of trade finance platform emerging from the 2008 financial crisis and taking advantage of the shifts in the financial landscape that have followed. PrimaDollar is one such company, and there are quite a few new players entering this space. Trade finance is a low-cost alternative to the traditional LC, allowing suppliers to be paid at or before shipment whilst allowing buyers to pay later. Trade

finance is better and cheaper than "factoring", which does not work well for emerging market suppliers because of cost and low advance rates. Trade finance is also "democratic", as it is equally available to suppliers of all sizes.

The system works quite simply: The trade finance company:

- purchases the shipping documents for cash upfront, often settling against copy documents which means that control over the goods can remain in the hands of a local bank until payment is received.
- collects from the buyer later and takes all the risk of non-payment.

This arrangement allows even SMEs to work without risk on Open Account with deferred payment (also called working on "sale contract" or working on "DA terms"). The cost and availability of finance for the trade is driven by the credit quality of the buyer, not the supplier.

What next?

We are in a period of transition, as supply chains move looking for lower cost locations and whilst financial support of the global value chain moves from the banks to the new breed of trade finance companies. This period is not without pain, but opportunities are emerging everywhere as a result.

More attention needs to be paid to the role of finance in the global value chain - as the unintended consequence of ignoring the new financial realities can result in lower economic growth and greater inequality in the supplier countries because SMEs are deprived of the oxygen of finance that they need.

The good news is that trade finance solutions generally work across South Asia without changes being needed to local legislation, bank regulations or foreign exchange controls. The bad news is that the finance gap is huge and getting larger - there is a lot of work ahead for everyone.

About the Author

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Case Study: Shell Pennsylvania Chemicals- Cracking the Code for Supply Chain Growth



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On June 7, 2016, Royal Dutch Shell announced it was building a \$6 billion ethane cracker plant in Beaver County, located in western Pennsylvania - and put a major spotlight on the Marcellus and Utica Shale plays and the opportunities they present.

Four years in the making, this project was the result of the collaboration and partnership of key state, regional, and local government organizations. Shell's decision to invest in Pennsylvania is a testament to our abundant and low cost natural gas liquids and proximity to key markets.

This game-changing plant will create thousands of jobs in Pennsylvania while expanding and creating regional, national, and international market opportunities for downstream manufacturing.

Shell's petrochemical plant will occupy over 1,200 acres and is projected to employ 6,000 during peak

construction and 600 fulltime positions in the future. When the construction of the plant is completed in early 2022, the facility will process ethane into polyethylene resin - a building block in the plastics industry.

Polyethylene will then be transported in pellet form via numerous types of infrastructure (river, roads, rail) to regional, national, and international manufacturers prepared to transform them.

The economic multiplier is estimated to be 5 to 7 times the initial investment of the Shell Pennsylvania Chemicals facility. The types of additional small- to medium sized business opportunities that will be generated by Shell's investment 1) plastics manufacturers that physically or chemically convert polyethylene resin for use as an input to make something else, such as housewares, drums, bottles, retail bags, food packaging, plastic film, and molded products; and 2) plastics distributors and resellers that play an important function in the value chain by purchasing polyethylene resin from Shell and selling them to smaller plastics manufacturing firms.

This will be the first ethane cracker in the northeastern United States and we expect other like investments to follow. Shell's investment is not happening in a vacuum. Over the past five years we

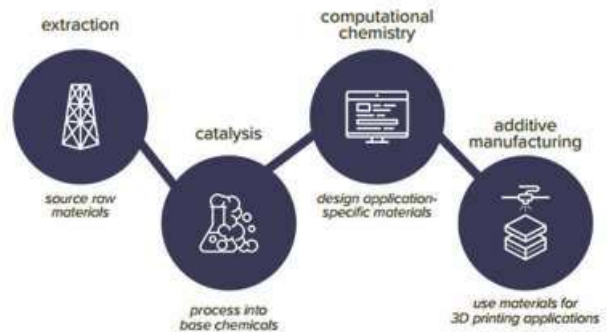




have seen a sustained interest in Pennsylvania, with both domestic and international companies expressing a desire to locate and expand in our region because of low cost ethane and other natural gas liquids.

The Gulf Coast has long been a hub for the U.S. petrochemical industry, but Pennsylvania is seeing increased activity - especially when it comes to international investment. There is strong momentum from the international community - as illustrated by PTT Chemicals' interest in Ohio, and the Chinese commitment to invest in West Virginia and the greater Marcellus- Utica Shale region (including Pennsylvania), which is expected to result in at least \$84 billion in investments. Continuing to attract international interest in the downstream supply chain is part of Pennsylvania's long-term strategy, as we know from experience that petrochemical and/or related manufacturing investments can take a up to a decade to move from concept, to development, to operation.

Across the natural gas supply chain, the schematic below illustrates the long term and sustained economic platform for small- to medium sized enterprises. After natural gas liquids are extracted as source materials, a critical mass of SME's will form to ensure lasting economic opportunity, seed collaboration, and create a petrochemical cluster that sustains industry growth.



This emerging market growth in western Pennsylvania is also leading the way to cutting edge technology and innovation - including advanced and additive manufacturing, robotics, and electric and autonomous vehicles - which will launch entirely new manufacturing opportunities, processes and products.

About the Author

At Pennsylvania Department of Community & Economic Development, Ms. Denise Brinley is responsible for building effective relationships with private companies, public officials, federal and state agencies, non-governmental organizations, and other partners to further the agency's strategic agenda in and around the energy sector.

Emerging Hierarchy of Global Value Chains: Possible Repercussions and Response for India

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1. Understanding Value in Value-Chains: The design and shape of GVC

Global value chains (GVCs) encompass both goods and services. There are service specific GVCs that are increasingly important in the global economy, and in which India is already a major player. These include GVCs related to IT and IT enabled services, digitally delivered services ranging from call-centers to remotely delivered education or healthcare, or remotely delivered database management and analytics. Much has been written about the evolution of these service oriented GVCs, India's role in it and future sources of competition and transformation to these GVCs.

This paper is not about service specific GVCs, but manufacturing, i.e. fabrication and development of tangible goods, and the entire gamut of goods and services that go into producing these goods. This caveat at the very outset is important for two reasons. First the developmental and supply chain challenges of succeeding in this eco-system for manufacturing GVCs is radically different from that of pure play intangible services. Second, India's success in integrating into and moving up the value-chain in such manufacturing GVCs has been sketchy to say the least. Therefore, it is in some ways more interesting to discuss this aspect of GVC development in the context of India's own challenges of economic growth and employment generation.

The focus of this paper is threefold. First is to analyze the transformation that is taking place in GVCs today that will lead to new models of production and new hierarchies of value-addition and employment within these GVCs. The second is to put this analysis in the context of the role of supply chain management and the allied services that go into the delivery of manufac

ured products to the global market. Third and finally, to ask what challenges India faces in developing the right eco-system to participate in such GVCs, and what role policy-makers and entrepreneurs play in that respect.

In this first section of this paper, an attempt is made to define the framework and organization of GVCs from which the later discussions on the criticality of supply chain management and other allied services in developing competitiveness in such manufacturing GVCs spring from. This section will also try and establish the nature of on-going transformation of such GVCs due to rapid technology change, as well as the framework of how markets work and consumption patterns are managed in an increasingly data driven digitalized world. These transformations makes challenging demands on India's policy makers to come up with an industrial policy and trade development response that will allow Indian entrepreneurs greater access and ability to corner value in the GVCs of today and of the coming decades.

1.1. Organization of Value-Chains: The TOSP Framework

Fragmentation of production and development of global value chains (GVCs) is not a new phenomenon; it had started in the 1980s fuelled largely by falling costs of logistics due to the containerisation and falling costs of communication and travel.

However, the form and shape of such GVCs started to change from the mid-1990s. Production chains started switching from vertical integration (of fragments) representative of the mass or Fordist production systems that represented the older GVC, to vertically disintegrated forms of GVC that are fundamentally different in their design (Chatterjee and Tsai 2002).

The advantages of scale economies in mass production start to be replaced by economies derived from horizontal, globally based input-output linkages with use of such newer forms of industrial design and production techniques (Markusen, et al. 1996).

The new industrial or economic geography is an amalgamation of tasks and activities, best captured by the so-called TOSP framework popularized by Baldwin and Evenett (2012). TOSP stands for Tasks-Occupations-Stages (of production)-Product, highlighting the fact that global production today represents integrating specific tasks or specializations across a globally fragmented chain. Figure 1 below provides the visualization of this concept.

As explained by Baldwin and Evenett “At the bottom is the product, which is conceived of as including after sales services. At the top are tasks, i.e. the full list of everything that must be done to get the product into

i.e. the relative decrease in the share of value added in manufactured products from the fabrication stages to pre and post-fabrication activities that are related to various services and intellectual property (IPR) related activity inputs to manufacturing.

Figure 1: The TOSP Framework

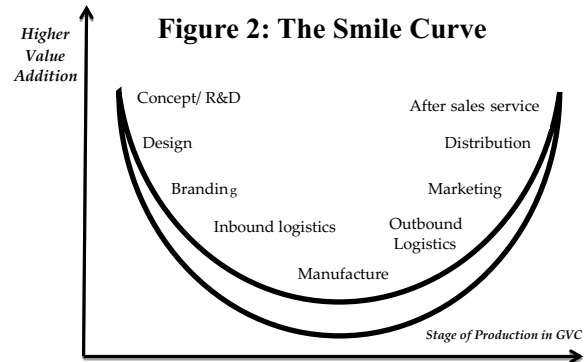
Tasks	1	2	3	4	5	6	7	8	9	10	11
Occupation	Occupation 1			Occupation 2		Occupation 3			Occupation 4	Occupation 5	
Stage of production	Stage of Production A					Stage of Production B				Stage of Production C	
Product	Product										

Source: modified by author from Baldwin and Evenett (2012)

consumers’ hands and provide them with associated after-sales services. The key insight this concept offers us is that the actual act of manufacture, represented by the physical process of combining tangible inputs, is just one of the stages of production involved in the overall delivery and value-proposition of the final product. It includes several tasks that are associated with different services specializations.

1.2. Where is the ‘Value’ in the Global Value Chain

While figure 1 illustrates that the actual production of a good (or even a service) is just one of the tasks carried out in the value chain, it is also important to understand the relative importance of each task and occupation, and different stages of production. A good way to understand this broader concept is to consider the very simple diagrammatic representation of the value-chain as developed by Stan Shih (1996), i.e. the Stan Shih smile curve, the CEO of Acer. According the Stan Shih, the smile curve is representative of a another important dynamic in modern value-chains,



Source: Author modified version of the Stan Shih (1996) smile curve

In a representative smile chart for a GVC in figure 2, pre-manufacturing activities related to development of intellectual copyright and branding, and the supply chain management activities related to sourcing inputs for manufacturing of the product have a higher share of the overall value then the manufacturing on the factory floor. Similarly, post manufacturing activities related to logistics and distribution, marketing, and very importantly, after sales services have a higher share of value compared to the act of manufacturing itself.

How truly representative is this of the reality of GVCs? Baldwin et al. (2014) find strong empirical evidence of this shift in Asian countries. They find that inputs from manufacturing sectors provided rising shares of nations’ export value added from 1985 to 1995, but sharply falling shares from 1995 to 2005. In a landmark empirical work using the firm level generation of value along supply chains on a unique sample of more than 2 million companies active in the European Union in year 2015, Rungi and Del Prete (2017) confirm that pre-and

post-fabrication activities related to IPR, supply chain management, and support services account for relatively higher shares of value compared to the act of fabrication itself.

What accounts for this shift, where what were typically characterized as ‘non-core’ activities and support services have come to represent the most important parts (at least in terms of value-addition to a product) as compared to the ‘core’ act of manufacturing.

One explanation by Baldwin et al. (2014) is the commodification of the factory floor activity, i.e. that fabrication has become commoditised. That is, the vast range of nations eager to welcome low-productivity manufacturing jobs has reduced the mark ups and labour costs in such stages. In this view, lead firms from high-technology high-wage nations offshore labour-intensive manufacturing task while keeping high-skill service tasks at home. The exponential increase in contract manufacturing facilities focusing on certain types of sectors underlines this ‘commodification’ of manufacturing.

Firm level data analysis by Rungi and Del Prete (2017) supports this assumption. They find that the generation of value-added is concentrated at the top and bottom of a supply chain, which involve the more ‘non-commodified’ IPR and services based activities. They also find strong empirical support of domestic value added retention, since production stages on the extremes of the supply chain, where value is higher, are preferably kept in the origin country.

These implications of these findings flow into Gereffi (1994) definition of the power hierarchy of global value-chains, i.e. who drives and manages such globally disaggregated production networks, and the implications for competitiveness and investment location choice for various tasks and production stages as defined in the TOSP framework.

According to Gereffi there are two types of value chains, i.e.

1. Producer-driven chains: large, transnational, integrated industrial enterprises play the key part in governing the chain. This pattern of governance is found in capital- and technology-intensive sectors such as automobiles, aircraft, and electrical machinery.

2. Buyer-driven chains: large retailers, brand-name

merchandizers and trading firms play the central role in organizing decentralized production networks through outsourcing. This type is typical in labor-intensive, consumer-goods industries like apparel, footwear, toys and consumer electronics.

Since both types of drivers mostly originate in developed economies, (though some large developing countries, especially China, have seen some of their firms emerge as large global firms that are drivers of value chains) it means that most of the value addition within GVCs still accrue to these developed economies, even though a lot of the activities related to actual manufacturing having shifted to developing country locations.

1.3. The Perfect Storm of Technology Shift and Data Driven Markets: Curving the Smile

Over the coming decade production technologies will increasingly see a huge make-over. The combination of robotics and automation on the shop floor, the internet of things and connected devices, and advances in 3D printing of industrial (and even processed food and agro products) would lead to greater customization and commodification of the fabrication activity. In other words, the share of the fabrication stage of production in the share of total value of the value-chain would decrease even more, while pre and post fabrication activities, especially IPR related services and services dealing with managing consumer relations and customization of product would see a huge increase in their share.

The other major change underway is the way global markets and the activity of marketing and distribution is slowly getting concentrated through the phenomenon of e-commerce. E-commerce majors such as Amazon, Alibaba, Rakuten, and ebay already account for ever larger market shares of retail. Even the market for industrial products and intermediates is taking place in e-commerce portals as medium and smaller sized firms take advantage of discounts and greater choice available in such online market places.

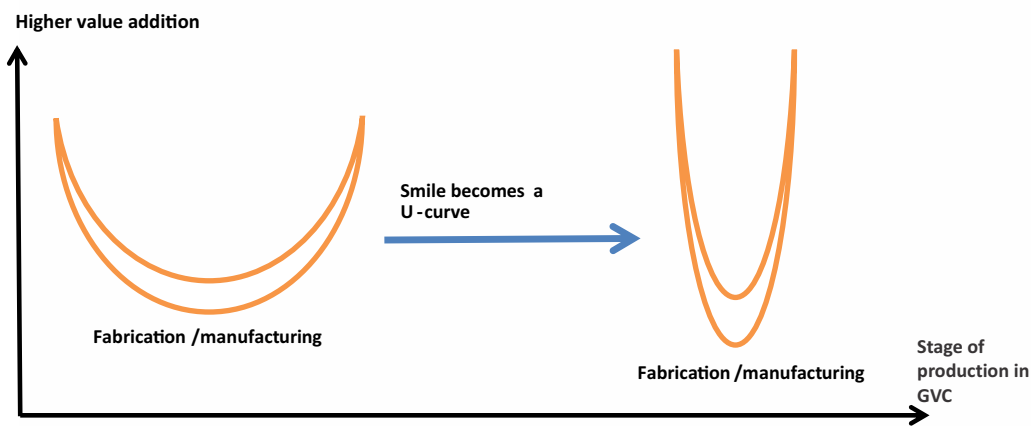
E-commerce giants are essentially driving data based optimization of global market places, that allows these firms to pin-point consumer preferences, and reduce inventory holding and management costs, while driving down logistics and supply chain management costs through economies of scale and data driven predictability of demand and supply cycles. In other

words, consumer data and data analytics have become a driver of competitiveness in a scale unmatched earlier.

This essentially adds another ‘driver’ to Gereffi’s list discussed earlier. I.e. in addition to producer and buyer driven value-chains, one can also increasingly see ‘data driven’ value-chains where large e-commerce firms play the central role in procuring goods and services, undertaking quality management, managing supply chains, and managing the inventory cycle of demand and supply, and arbitrating the global exchange of goods. In return for playing this role in the value-chain, the e-commerce firm captures a major share of the value, and it does so in return for services rendered related to data analytics and logistics and other support services, and not the actual act of fabrication.

The forces of dynamic technology shifts in production process and the data driven arbitration and management of global markets would result in further shifting away power from the primary manufacturing activity (i.e. fabrication), and increase the share of value for pre fabrication and post fabrication activities. This would make the ‘smile’ look more a like a ‘U-curve’ (as in figure 3 below)

Figure 3: Curving the Smile-Further transformation of the Smile Curve



In light of the discussions in this section, one has to carefully analyse what being ‘competitive’ in GVC terms means. Competitiveness would not be linear, but would apply to certain kind of tasks and activities, which in turn would determine the share of value that firms and countries hope to compete for.. It is clear from the discussion in this section that the simple

location of fabrication in a country might not guarantee meaningful share of ‘value’ from the value-chain, neither is such ‘competitiveness’ in attracting fabrication activities sustainable in light of technological and market oriented changes underway.

As the global production process transforms away from Fordist mass production to a more post-Fordist industrial organization (often popularly called industrialization 4.0), driven by automation and customization, and data driven management of market places and commercial transactions, governments and firms need to look at the drivers of competitiveness in this transition phase, and over the longer term. Section 2 focuses on some of the key drivers of competitiveness in the medium term, which is representative of the current transition phase between Fordist, economies of scale based mass industrial organization to industrialization 4.0. Section 3 focuses on the longer term when the transition to new industrial organization models and market management forces is complete.

2. Defining Competitiveness in the current transition to Industrialization 4.0: Role of logistics and supply chain management

In order to emerge as a competitive location for a particular task or an entire stage of production in a GVC, that location would require at the very least cost competitiveness in terms of the carrying out that particular task/stage of production, and well developed connectivity and supply chain capabilities that minimizes the cost and uncertainty of working within an integrated production network.

But in order to increase or optimize economic gains from participation in GVCs and to maximize share of value from a GVC, a location would have to develop an entire eco-system of different services and solutions that go into the GVC. In other words, be the location of choice of for providing as many of the tasks and stages of production that make up the GVC, with preferably a

large share in the more value-added tasks and stages of production being undertaken in that location.

For most GVCs this would mean providing a competitive proposition for the fabrication activities, and combining this with logistics and supply-chain management capabilities. As Olga et al. (2008) point out, supply chain management and logistics today go far beyond the 'traditional' tasks of physical storage and movement of goods. Business-related logistics and supply chain management includes services include customer service, demand forecasting, documentation flow, inter-firm movements, inventory management, order processing, packaging, parts and service support, production scheduling, purchasing, returned products, salvage scrap disposal, traffic management, warehouse and distribution centre management, and transportation. These services must be planned, coordinated and controlled to maintain the production system.

As Banerjee (2015) points out, logistics services include a holistic range of services the encompass providing physical connectivity, managing regulatory issues and compliance management of products moving through global value-chains, management of relationships between vendors and service providers, quality management, and after sales services. In other worlds logistics services do not just provide just physical connectivity between locations, but also 'transactional connectivity' between parts of the value-chain, as well as the final consumer.

A casual look at the representative smile curve for a manufacturing GVC in figure 2 would help underline the fact that a vast majority of the pre-fabrication and post fabrication activities are actually logistics and supply chain management service. Thus, with the exception of the IPR related tasks such as R&D, product development in pre-fabrication stage, and some of the marketing related tasks in post-fabrication, modern logistics and supply-chain management play a central role in all the other tasks and stages of production. GVCs are managed and inter-mediated through some major nodes located across the world which have developed a vibrant eco-system of such logistics and supply-chain management services, in addition to financial and other associated services. These nodes capture a dis-proportionate share of the value emanating from GVCs. The question for India, as it seeks to expand its footprint in GVCs, is what drives and helps develop such nodes.

2.1. GVC Inter-mediation Nodes: Agglomeration economies in supply chain management

It is evident to even to a casual observer that cities like Hong Kong, Shenzhen, Rotterdam, Busan, or Kuala Lumpur play core roles in the global supply chain by offering logistics and associated supply chain management services. The range of these services includes physical connectivity to distribution and supply networks across the region and world. But it also includes 'transactional connect' related to the presence of trading companies that match buyers and sellers (marketing and purchasing functions), quality control, packaging and sorting, certification and testing to meet regulatory compliance in countries served by that node, paperwork and documentation among other such services. As pointed out in a report by WTO (WTO-JETRO 2017) developing a competitive eco-system of such services enabled Hong Kong to emerge as a major re-exporter. The combined re-exports of Hong Kong and Singapore represented 11 per cent of Asia's total merchandise trade in 2009.

While one can argue that geographic location played a role in the formation of these hubs, this is not the main or defining reason. All of these nodes developed because of the size of their primary hinterland market. For Hong Kong it was China, for Singapore the wider ASEAN economies, for Busan and Rotterdam, Korea and EU respectively. In other words, the leveraged the economies of scale offered by their primary hinterland market to develop a sophisticated eco-system of services that have a worldwide reach in the service of GVCs.

The subtle role of economies of scale in developing such nodes in GVCs is well fleshed out by Coe et al. 2004. They point out that these nodes servicing large hinterland markets as distribution centers became high throughput gateways and corridors. Over time global production and consumption started getting mediated through these gateways and they have become freight distribution clusters, managing freight flows for several unrelated users benefiting from economics of scale in sharing the same facilities and equipment of transport terminals. This cut transport costs and contributed to higher reliability. As Ojala et al. 2006 highlights, these nodes emerged as value chain coordinators and integrators that coordinate and integrate various logistics tasks with manufacturing, marketing, distribution and sales. In other words, provide those tasks and undertake those stages of

production in GVCs that have the highest share of value. By combining these tasks and stages of production with their hinterland that specialize in various forms of fabrication, i.e. manufacturing activities, they help optimize the participation in GVCs for economic actors in their region or country.

2.2. Conditions for developing India into a GVC hub

It stands to reason that countries with large domestic market size like India, which can build upon the economies of scale, and in the post-Fordist model the economies of scope (given the diversity of demand of the domestic market), would have some advantage in being able to competitively undertake the task of fabrication. Two key factors need to fall into place. First setting up and operating costs of such fabrication activities are manageable, or more importantly, perceived to be manageable. Second is to develop a set of export and industrial development policies that reward increase in value-addition and product development. Second, develop an eco-system of value-added services centred around supply-chain management. Fourth would be to invest in human resources that allow the Indian workforce to be successful participants in the GVCs of the future. This last point would be taken up in greater detail in section 3.

In the first count, i.e. managing cost and complexity of undertaking fabrication or manufacturing in India, much has been written about the problems of ‘Doing Business’ in India.¹ The actual and perceived problems of ‘doing business in India’ has reduced the quantum of activities in the fabrication stage of GVC production to come into India. Indeed, as Roy and Banerjee (2015) point out, a vast majority of FDI into India in the last two and a half decades was ‘market’ seeking, i.e. units were set up for producing for the Indian market, and not to manufacture for the ‘global market’ in the GVC sense of the term. This is stark contrast to smaller economies in Asia such Thailand, Malaysia, and now increasingly Vietnam, where fabrication activities were located to produce for global markets. In other words, such FDI into these smaller Asian economies were ‘efficiency seeking’ FDI in fabrication related activities within GVCs.

With recent reforms that have seen a significant jump in India’s doing business performance,² it is expected

that India will attract more of the ‘efficiency’ seeking variety of FDI in fabrication aspects of GVCs, especially in the contract manufacturing space. But as our earlier discussion on the scope and quality of GVC participation shows, in order to be able to maximize benefits and share of value from GVC participation, there is need to do more than just provide low-cost fabrication stage of production activities. In order to move up the value chain, India would have to create a supply-chain management and logistics eco-system that emerges as a critical node in GVCs, and radically alter the manufacturing environment towards greater innovation and value-addition. The next two sub-sections deal with these two critical topics.

2.2. Developing a World Class Supply Chain Ecosystem in India: Some Key Reforms

As was pointed out in earlier discussion, the eco-systems of global GVC mediating nodes such as Singapore, Hong Kong, Shanghai, Shenzhen, Kuala Lumpur, and Dubai that leverage economies of scale in provision of supply chain management and logistics services, as well as some marketing, financial services, and innovation, are critical to stepping up share and scale of participation in GVCs.

The development of such an ecosystem requires a conducive business and operational environment. This would be a pre-requisite to encouraging private investments into developing a world class supply chain management and logistics services eco-system that services GVCs across the region and the world. While private investments will follow certain business logic which would dictate individual firm level decisions based on micro-level assessments, absence of a conducive operational environment would always lead to under-investment and lack of scale and quality needed to match GVC nodes like a Shenzhen or Dubai. So what are some of these macro-level reforms?

a) Trade and Logistics Facilitation reform from a bottom-up, ground level perspective

The last few years has seen the government of India undertake a significant number of trade facilitation reforms. Prominent among them includes the implementation of a genuine single-window for customs clearance,³ allowing direct port delivery for selected list of trusted entities, and slowly putting in place the

¹ See Roy, J and Banerjee, P (2013) for an overview

² India jumped 30 places from being ranked 130 in World Bank doing business rankings to 100 in 2017

³ This ambitious program is named Single Window Interface for Facilitating Trade or SWIFT. Details can be found at <https://www.icegate.gov.in/SWIFT/>

IT infrastructure that would allow paperless inter-face with the customs and other different agencies of government involved in the trade process. There is also commitment to improve the risk management system in a manner that eventually over 90% of goods are cleared without interdiction of any sort from customs authorities.

In addition to these, the government of India is working to reform or update several regulations and procedures in line with its commitments to the WTO Trade Facilitation Agreement, including in areas such as post-clearance audit and advance rulings which is expected to further improve trade facilitation environment in India. However, all of these reforms are top down and focus on customs administration and a few other agencies in goods clearance process. As Kher and Banerjee (2017) point out, addressing the overall incidence of transaction costs and systemic inefficiencies requires a much more holistic view of cross border movement of goods that include ground level challenges of port and airport operations. Even regulatory bottlenecks are often related to implementation issues at the ground level rather than policy.

Indian policy-makers also need to understand that despite significant improvements in the Indian cross-border trading environment in the last two decades, both on the regulatory and infrastructure side, the country will not be benchmarked against its past performance, but regional and global comparators in the present time. To use an illustrative example, a potential investor would not benchmark the operational efficiency and regulatory environment of customs and other clearances at JNPT in 2017 with how things were in 2007 in India, but with how a port in Vietnam compares with JNPT in the present time.

The key point being made here is that there is wide gap between stated policy reforms at the higher echelons of government, and the quality of governance and implementation on the ground. Such gap in performance is not limited to the government sector actors involved in the gateway ports and airports, but also many private sector actors, such as cargo and port terminal operators, customs brokers, cargo handling agencies, airlines and shipping companies.

Improving actual supply chain management performance would require addressing these problems on the ground. Blaming these on the ground challenges on

attitudinal problems that cannot be solved, thus by definition making them outside the pale of solutions cannot be an option. Neither is creating temporary islands of excellence when one particularly proactive chief executive of officer is in charge of operations at a port or airport a sustainable solution.

Sustainable solutions can only be found if technology is harnessed to observe actual on-the-ground governance performance of customs and other officials, and operational efficiency of the various stakeholders in ports and airports, including terminal operators and managers, ground handling agents, brokers etc. In other words develop a mechanism to monitor port and airport performance in terms of cargo handling real-time on the ground level, identify the bottlenecks as they occur, and rectify issues within hours and not minutes. Technology to allow such real-time performance monitoring that allows much greater transparency and accountability already exists in parts in our ports and airports, the next logical step is data integration and development of protocols that analyse this data meaningfully to allow such performance monitoring. Developing adequate institutions that can then use such real time data based performance monitoring to establish accountability and enforce solutions quickly is also within the realm of possibility if the highest levels of government have the political will to push for it. Kher and Banerjee (2017) provide a detailed analysis of how both of these objectives can be achieved.⁴

b) Liberating critical trade infrastructure investments from the ‘curse’ of approvals and vested interests

Developing new facilities or ramping up investment in world-class logistics and trade infrastructure, such as specialized gateways for handling goods and air freight stations, new and more advanced terminal infrastructure in ports, and modern warehousing are often held up due to delay in ‘approvals’ of various types with various departments of government of India.

While India has a very open and liberal FDI policy in logistics infrastructure, setting up a facility requires clearances from numerous agencies. This is in keeping with the theme of good macro policies (such as an open investment regime) being held up by several implementation issues on the ground. Thus an investor might develop a facility for several million USD, and then see it not become operational due to pending approvals

⁴ For a more detailed discussion of such a system please refer to Kher, R and Banerjee, P (2017)

for months, leading to cost escalation and payment of rent and maintenance without having any revenues coming out of the facility. Several such incidents have foreign and Indian investors wary of committing large projects.

In other cases, inability to deal with vested interests has made even good ideas ‘unviable’. For example, Air Freight Stations (AFS) are a good idea in that it would add additional processing capacity for India’s highly congested air gateways, especially Mumbai and Chennai, which are constrained for space in the airport complex itself. However, such an idea can only work if there is an agreement from existing cargo terminal operators not to charge full fees for cargo that has already been processed at an AFS, but pass through the terminal to be loaded on to aircrafts. Such ‘double’ charging would make AFS unviable in terms of costs. However, the lack of proper resolution of this issue continues to plague the development of AFS in India.

The discussion of this specific example of AFS is in order to highlight the issue using an illustrative example. Many such examples of ‘vested’ interests holding up efficiency and cost reduction, and preventing economies of scale in the Indian supply chain management exist, and a deserves an entire analytical paper on the subject.

2.3. Revamping Trade and Industrial Development Strategies and Incentives⁵

As was pointed out in the conclusion to section 1, the world is quietly undergoing a seismic change that would re-define the very concepts of productivity and employment. This change is both technological and socio-economic. Diffusion of technology means new innovation spreads very quickly and renders older products redundant. In the last century, developing country firms had a longer time to adapt to change. They do not have that luxury any more. An illustrative example is the time taken to complete the transition between VHS and DVD in India in 1990s (several years) and DVD and new media more recently (almost instantaneous).

In addition to technological change, a new cohort of young middle-class consumers is defining consumer patterns globally and is highly adaptive to new products and technologies. They are also willing to pay a

premium for innovations and quality. Combine these dynamics with increasing automation and artificial intelligence in the production of goods and services, and you have a perfect storm approaching.

a) Inadequate trade and industrial policy to meet GVC challenges and technological transformation

The question is whether India’s trade policy is up to the challenge. Being successful at globalization requires the ability to undertake structural change, that is, to move human resources and capital from under-performing or dying sectors and re-employ them in more competitive activities. Research has underlined that developing countries in Asia could sustain higher growth in the 1990s and 2000s relative to their counterparts in Latin America and Africa largely due to their better ability to make structural changes.

A trade policy designed to foster successful structural change would have to have the following features:

- It should reward value-addition, and promote employment in activities with higher returns to labour, that is, more productive sectors.
- It should promote investment in innovation and new product development and help such products find a global market.
- It should ensure fair market access for Indian products subject to stringent technological and quality standards in global markets.
- It should leverage domestic economies of scale to attract FDI in sectors with higher returns to labour.

India’s current trade policy and promotion tools are inadequate in addressing any of these goals. Current trade promotion schemes in India essentially amount to rewarding businesses with some financial sops in the form of incentives post the export activity.

This design has two essential flaws. First, it means that the trade promotion incentives are not designed to help a firm attain export competitiveness in the first place, but reward already successful exporters to improve their margins from trade. Second, it is not designed for strategic interventions based on value-addition and employment achieved by the exporting firm. This reduces the current regime to being an immediate-term palliative rather than a longer-term program designed to aid India’s competitiveness through structural change. In addition, such post-export incentives are increasingly under challenge

⁵ This section is largely drawn from two editorials by the author that appeared in Hindu BusinessLine; “India Stuck with Archaic Trade Policy”, Hindu Business Line, January 15, 2017, and “Need to Rejig Export Incentives”, June 6, 2017

from WTO rules on export subsidization.

The trade promotion activities conducted by export promotion councils and business associations in India remain confined to the traditional ‘trade fair’ mindset. While they are still important for business development, such trade fairs are increasingly a 20th-century relic in the 21st century’s network-centric models of business.

But developing ‘production’ and ‘innovation’ based incentives are expensive since benefits cannot be limited to just successful exporters like in the current schemes, but are potentially open to all manufacturers and service providers. Thus, the burden on the exchequer due to either tax foregone or direct financial support can be substantive.

An export development program reliant on production-based subsidies therefore require targeting of specific sectors in a manner that helps develop competitiveness, but with some discrimination criteria that ensures that the scheme is not open to all. Designing such programs would require institutional capacity to develop the right criteria, transparent administration of such criteria in the distribution of benefits, and close cooperation with industry associations and sectoral export promotion councils. The current administrative machinery is insufficiently prepared for such an exercise.

But radical overhaul is necessary not just to make our incentives more compatible with WTO rules, but also to address the serious challenge posed to Indian industry by industrialisation 4.0 and automation. India will not be able to replicate the low-wage-middle-skill manufacturing boom that worked for China and other SE Asian countries, given the current shifts in technology and consumer preferences.

A possible three pronged approach could be considered to achieve this transformation, focusing on developing institutions of governance that rely of public-private cooperation.

1. Public-private venture capital to fund innovation and productivity: New product development, financing strategic tie-ups with global partners or expansion of product line are all projects that have a certain amount of risk tied to it. Exporters, especially small and medium exporters find it difficult to find right kind of financing for such projects. Private venture capital

is not interested in smaller projects. In many cases the risk is seen as too high.

One way to lower the risk and increase the appetite for the private sector is to create a public private partnership (PPP) venture capital fund with the government infusing about 25 per cent of the seed capital and private sector players the rest. Private sector would also bring in the professionalism of venture capital managers. The Irish government did this for their technology sector based exports with some success. The Indian government too can create such venture capital funds for a few critical sectors with potential for future growth and employment generation. These could include the next generation of high-end textiles, machine tools, pharmaceuticals, or data analytics or remotely delivered health services for example.

To make such a scheme even more attractive, it can be supplemented by an ‘Angel Law’ modelled on an Israeli incentive programme that allows venture capital investors putting money in such higher risk projects to deduct a portion of their investment amount out of their taxable income.

2. Funding performance pay based business development: Larger firms benefit from professional help of consultants. In industrialised countries, highly evolved clusters provide hand-holding services to exporters on product development, marketing, and sourcing of inputs.

Most of these services are ‘performance based’; in other words, consultants charge a very low base fee, and take a share of actual profits made by the firm due to successful product or business development execution. The Indian export eco-system (except some large firms) is largely bereft of such a focused professional business development ecosystem. The government can run a special programme, in partnership with export promotion councils, to engage such professionals. The recruitment process should be through transparent global tenders, and the contract should be designed in a way that professionals get paid a majority of their fees based on their actual performance, i.e. export growth or export volumes.

Interested exporters can approach these professionals with proposals. The exporting house would be expected to bear a percentage of the professional’s fees, which would mean they also invest in the successful implementation of the project. The access to these

services with the initial state subsidy would help level the playing field for Indian exporters' vis-à-vis competition.

3. Supporting recruitment and training of new skill sets: The key to adaptation to new technologies and production methods that are rapidly replacing the old ways of the factory and office would be having the right kind of human resources with skills and know-how to work with artificial intelligence, big data, robotics, and factory floor automation. Such changes would not be confined to just technology intensive sectors like auto industry or IT enabled services, but extend to textiles and food processing.

One way to handle this transition would be for the government to bear a portion of the cost of hiring such skill-sets for SMEs and start-ups. Many countries provide indirect incentives for acquisition of skills that allow the firms to adopt new technologies and increase productivity. A simple scheme is to give a certain percentage of salaries hired by MSME for such advanced talent as an incentive. Allowing a certain portion of such salaries paid as a deductible from net income would be another way, using the tax foregone method.

The key is for government to start considering the range of possibilities available and develop the institutional framework within the bureaucracy and industry. The country has no options but to incentivise competitiveness and productivity in line with the new industrial future.

b) Antediluvian Trade Agreements

Another key area of deficit in India's trade policy armory is the archaic design of India's existing trade agreements. The Indian narrative around trade negotiations remain fixated on tariffs that are increasingly less important for market access gains. Trade in the 21st century is governed by a plethora of behind-the-border and at-border barriers related to technical and quality standards.

Some of these standards are defined by government regulators; others emerge from private norms developed by lead players in the market. Helping Indian firms surmount the barriers imposed by such standards would require proactively using trade agreements and other institutional solutions to reduce the cost of

adhering and complying with these standards. The compliance costs have to be so reduced that even an SME can afford it. This in turn would need revisiting our negotiating priorities for trade agreements, besides investing in technical institutions that are capable of engaging with the standard setting and vetting agencies globally.

A common theme running along this section is the need for transformation of systems and business environment that creates the right set of incentives for India's business community to invest in the right production models and skills for the future and develop the capacity to deliver an expanded list of services and tasks to capture higher share of value from GVCs. While the focus of this section has been on supply chain management and industrial policy, the sub-text has highlighted the importance of people and skills. This is the crux of the longer-term transformation to meet the challenge posed by new-age GVCs that are slowly developing. The final section of this paper that follows is focused on this aspect.

3. Revamping Education Policy and Design for Industrial Transformation ⁶

A quick recapitulation of the transformation of industrial value-chains is useful at this point. The export led developmental model, on which GVCs start emerging from in the 1970s and 1980s rested on state supported industrialization and a focus on export orientation using lower production costs as a competitive edge. Lower production costs were largely driven by lower labor costs in early stages, and later by increases in labor productivity. Variations of this model were successful across East Asia.

But as discussed in section 1, technological change and newer business models i.e. data driven online markets matching global supply with demand), the terms of trade is again shift decidedly in favor of owners of intellectual capital and technology, and diminish the returns to labor. This would be a great disadvantage to countries in Asia with large young working populations like India.

India obviously needs an 'Industrial Policy 4.0' to deal with this new phase of GVC development, popularly defined as 'industrialization 4.0'. Business as usual would be a disastrous path to pursue, relegating India to a peripheral position in the global economy with a

⁶ This section draws largely from an opinion piece penned by the author that appeared in Hindu BusinessLine "We need industrial revolution 4.0" October 24, 2016

large segment of its population unemployable or under-employed in the new GVCs that are emerging. The political and socio-economic implications of this situation are scary to say the least.

The coming transformation is inevitable. But the negative impact of this change can be minimized, and Indian industry can create competitive opportunities for employment. But this would require a massive resource mobilization focused on developing the ability of the working population to absorb new skills to be employable in this new economic environment.

The state of skilling in India in the context of the coming phase of industrialization in India is abysmal. Our higher education infrastructure is in shambles and industrial training apparatus is woefully inadequate. Consider the following facts.

- Industrial training, much of it very basic and outdated in the context of coming technologies, creates only 1.7 graduates annually. With over 300 million new workers to absorb in the next three decades, this number is abysmally low.
- India graduates around 7 million graduates in social and natural sciences, most of them from poorly run

Figure 4: Changing skill priorities in the economy

TOP SKILLS IN 2015

1. Complex problem-solving
2. Coordinating with others
3. People management
4. Critical thinking
5. Negotiation
6. Quality control
7. Service orientation
8. Judgement and decision-making
9. Active listening
10. Creativity

TOP SKILLS IN 2020

1. Complex problem-solving
2. Critical thinking
3. Creativity
4. People management
5. Coordinating with others
6. Emotional intelligence
7. Judgement and decision-making
8. Service orientation
9. Negotiation
10. Cognitive flexibility

Source: Delivered-The Global Logistics Magazine published by DHL, February, 2017

Capturing a larger share of the ‘industrial revolution-4.0’ would require investment into high quality skills related to applied science and technology, engineering, quantitative and social analysis, design and product development. Since shop-floor activities that would still be done by humans would require high familiarity with technology and analytical abilities, this would mean preferred workers would need to have educational attainment of the levels currently available to college graduates and advanced industrial training institutes (of which very few exist in India). As the chart in figure 4 below shows, the profile of key jobs and skills have already seeing transformation through the last decade or so.

The next generation industrial policy is therefore intrinsically linked to education policy.

3.1. Highly inadequate capacity for skilling in India

state universities. A vast majority of them lack any applied skills.

- Going by the published balance sheets of a national university based in Delhi and an affiliated college of Delhi University, expenditure of these institutions are largely dominated by salaries of staff and maintenance (about 85%) leaving precious little for investment in research and advanced learning modules (about 5%). This ensures a culture of mediocrity and low adaptation to change.
- Major tech firms re-train over 80% of their fresh engineering recruits. And even this re-training is largely for ‘low skill’ jobs that are likely to be eliminated by automation! The quality of teaching required for inculcating industrialization 4.0 can therefore be safely be assumed to be absent in India
- Most colleges are woefully short of teachers even for the existing curriculum, let alone devote resources to teaching of new skills and courses. To

- use a glaring example, one engineering college in West Bengal has fourth year students' act as teachers for first year courses.

3.2. Education as Industrial Policy: Agenda for reform and political will

An action plan to tackle these and other weaknesses needs to be put in place and then implemented urgently. But putting this action plan would require political will that will radically alter the existing apparatus of skilling and higher education in the country. The process would long and painful, and resource mobilization required would be huge. Since higher education is a state subject, creating political consensus would be critical. Such consensus would also be needed to overcome the vested interests within the teaching and academic community who have turned India's universities into islands of mediocrity.

Four critical interventions are involving the private sector, finding innovative ways to finance development of advanced curriculum, integration with industrial and applied training, and developing a sustainable pool of next generation of teachers and trainers. Each would require individual mission mode initiatives.⁷

Another major initiative would be the combination of ICT based training with regular classroom teaching and on-the-job training, and finding the right balance of these methodologies. This would need global best practices, and its implementation would require industry to be fully on-board.

The current government has made a good start with the Skill India program, but given the enormity and complexity of the problem facing India, this is like Band-Aid. Besides Skill India and education reforms are currently two separate initiatives with little actual over-lap.

The first urgent step is to recognize the enormity of the challenge. The second would be to integrate the industrial development and financing options already available with the government, and re-design them with a skilling and higher education focus. The mission

mode action plans on various aspects discussed above would follow from that.

4. Conclusion

This paper is a very basic overview of the fact that technology and business model changes to manufacturing GVCs are radically changing the form and hierarchy of global production. The specific tasks and stages of production related to provision of skilled technology and intellectual property driven inputs and management are increasing in relative importance to the tasks and production stages in the factory floor related to the actual act of fabrication of a tangible manufacture. It is the combination of supply chain management related services, skill-intensive design and product development functions, and digitalization driven marketing and consumer management functions that dominate the main share of value in these GVCs, and would be the future sources of growth and employment.

In that context, competing in such GVCs and deriving sustainable economic growth and employment through participation in them would require new strategies and policy responses. The critical short to medium term strategy would be to ensure that India focuses on rapidly improving on-ground performance of trade and logistics facilitation, focusing on its main gateway ports and airports, that is central to supply chain management.

This includes creating a conducive business environment to allow for greater investment in facilities and businesses related to such supply chain management services. Increasing economies of scale of such businesses would allow India to capture ever larger share of value from GVCs, in a manner that other global hubs of supply chain management such as Hong Kong or Rotterdam.

In addition, India needs to radically alter its current mix of trade development strategy to bring it in line with the need for rewarding greater value-addition, innovation, and product development. India's trade agreements also need to re-focus on intellectual

⁷ Several studies and reports have highlighted the specific strategies required on all of the four major themes outlined here, and require a dedicated paper and analysis to understand the implications of these strategies. Interested readers who want further details can look at the following publications as a starting point. These are: National Knowledge Commission (NKC) of India: An Overview available at http://eprints.rclis.org/7462/1/National_Knowledge_Commission_Overview.pdf; Higher Education: Reforms and Resistance, foundation lecture of NCTE by M. Anandkrishnan, available at <http://www.ncte-india.org/M.%20Anandkrishnan.pdf>; Higher Education in India: Vision 2030, E&Y Report for the FICCI Higher Education Summit 2013, available at [http://www.ey.com/Publication/vwLUAssets/Higher-education-in-India-Vision-2030/\\$FILE/EY-Higher-education-in-India-Vision-2030.pdf](http://www.ey.com/Publication/vwLUAssets/Higher-education-in-India-Vision-2030/$FILE/EY-Higher-education-in-India-Vision-2030.pdf);

property and product standard related issues that are reflective of real market barriers in this new GVC driven world, and not tariffs.

Over the longer run, as skill intensity of every task and production stage in GVCs become even greater, and automation, robotics and 3D printing ensures that even factory floor tasks require greater familiarity and use of technology, education and know-how of the workforce would emerge as the defining element of competitiveness. In that context, India's current education and industrial training eco-system falls short of ensuring India's sustained competitiveness in the future.

This aspect requires immediate and urgent attention. Given the sheer levels of resource mobilization required to skill and prepares what is effectively world's largest cohort of potential workers for this industrial transformation, this would not be an easy task to achieve. Political will and negotiating with several vested interests would be represent challenges standing in the way. But not taking touch decisions now might result in a large share of India's population being relegated to being marginal participants in the economies of the future which has serious implications for India's socio-economy and its democratic future.

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Export Portal Using Blockchain to Protect Global Value Chains

Why the world's major financial institutions care about the infrastructure underpinning cryptocurrencies



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You've heard of bitcoin, right? Or maybe you're more familiar with litecoin? Peercoin?

All these are forms of cryptocurrency. Articles are published every day demonstrating the benefits of one over the other, along with the value that comes with their use because of the lower transaction costs and tax savings in certain corners of the economy.

Less, however, is written about the technology behind cryptocurrency. It's called blockchain and many believe it could be a significant disruptor that will lead to banks and financial institutions saving billions of dollars each year. Financial players had best pay heed, lest they too become irrelevant.

Blockchain is simply the sharing of information among many in an encrypted, verifiable way that can be updated in real time in a secure information loop. Platforms such as exportportal.com uses blockchain technology to ensure the integrity of from both the buyers and sellers.

It is an unalterable single source of information that no individual party has control over, that cannot be hacked or duplicated, and that has been the dream of many in the business world for decades.

But communication and transparency are not all that blockchain offers. When information is readily available, verified companies will stand out on the world stage. This is why many big-name financial players are interested in where this technology can go next.

For centuries, the control of international shipments

and other forms of assets were handled by trusted third parties – banks, for instance – with an accompanying slew of forms and personnel that had to be managed and tracked. On the other hand, verifiable blockchain information opens up new opportunities because there will no longer be the need for extraneous, time-consuming entities, meaning more value can flow directly to the bottom line.

Even before blockchain, the model for shipping goods from a manufacturer to a seller was evolving toward



higher levels of efficiency and security. This only speeds up that evolution.

Soon, financial institutions will be able to take positions with shipments or companies because they understand that the information available on trusted platforms using blockchain technology has been thoroughly vetted.

Export Portal of Glendale, California USA, spent the last six years building out a private blockchain-based



B2B trading platform called exportportal.com. With verified manufacturers and sellers from more than 80 industries in more than 100 countries on a secure e-commerce ecosystem, middle men in what used to be referred to as a supply chain are fast becoming a thing of the past.

Because information is transmitted via a blockchain, sensitive data is not stored in a single central location. Instead, it is distributed throughout the world by computers that carry relevant information from one manufacturer, buyer, freight forwarder or logistics node to another.

Blockchain technology creates a transparent, distributed and decentralized system that tracks every aspect of a transaction. As a perfect example, at our company, none of the information on Export Portal's proprietary platform can be manipulated or changed without the agreement of every party involved. All communication is handled in real time, eliminating extraneous third parties who add time and cost with the myriad of documents traditionally involved with international transactions.

The decentralization of trusted and verifiable information that is inherent in a blockchain system will mean that fewer entities are involved, leading to more direct selling and faster time to market. This new business activity will be backed by innovative financial options for banks that are willing to take on mitigated risk. The sharing of secure, verified information that is less dependent on and influenced by fewer people will only

lead to greater efficiencies.

You can imagine that small to medium-sized businesses lacking distribution channels that are hesitant to enter new countries or markets can be more visible on the world stage by taking advantage of blockchain.

The business world is hungry for a technology that will weed out the frauds, fakes, intellectual property theft and illegal trade that is fast approaching \$1 trillion globally. With exportportal.com's rapid growth, they are leading the way for global businesses to join their blockchain-enabled platform by recruiting Brand

Ambassadors in 100 countries in 2018, with India as Export Portal's initial focus.



The time is now for brands, communities, government tax bases and families dependent on the free flow of verifiable business information to understand that what shadow companies once got away with is not going to be tolerated or even possible with blockchain-based trade through exportportal.com.

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Ms. Ally Spinu, Founder-CEO, Export Portal, California (USA). ExportPortal.com is an international e-Commerce B2B (EC-B2B) ecosystem that guides sellers, manufacturers, and international buyers of all sizes and experience levels through the export and import process from start to finish.

For more information goto:

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Global Value Chains in Energy Storage Sector

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Ever since the existence of an electrical grid, grid operators have been looking for ways to safely and efficiently store energy so that it can be supplied and consumed on demand. Energy storage technologies have huge potential to significantly contribute to the transformation of Indian electric grid towards a greener, resilient and reliable grid within next decade.

Advanced energy storage technologies can play an important role in renewable integration, energy access, electric mobility and smart cities initiatives by the Indian Government.

Over 20 different types of grid scale energy storage technologies are either commercially available and/or are under development across different regions worldwide. This includes mechanical storage like pumped hydro storage, flywheels, compressed air and electrochemical storage such as lead acid, advanced lead acid, lithium ion chemistries, sodium-based batteries, nickel-based batteries and flow batteries. Advancements in fuel cells and traditional thermal storage are also relevant to various emerging applications.

Indian Energy Storage space is in an interesting phase. Energy storage has almost 20 different applications in India such as renewable integration, grid ancillary services, diesel minimization, micro grids for energy access and campuses as well as electric vehicles. IESA estimates the market for energy storage would grow to over 300 GWh during 2018-25.

Indian energy storage market is growing but still there is a supply-demand gap. India is anticipated to become one of the best markets for the adoption of energy storage technologies due to several drivers like the fastest growing economy, increasing share of renewables, transmission constraints, need for providing 24x7 quality power and electric mobility mission.

India's energy storage market is currently dominated by lead acid batteries with annual sales of over \$6 Billion. In past 2-3 years, India has also witnessed deployment of over 1.5 GWh of Li-Ion batteries for distributed and transportation applications.

Most of the batteries currently consumed in India come from China, Korea, US, Japan and Europe. China has 80 GWh of manufacturing capacity, US has around 40 GWh, while Europe has 30 GWh. In the consumer electronics space, importing and assembling has been feasible so far for India and if tax benefits are provided by the government, indigenous manufacturing can pick up.

IESA's Lead Acid Battery Market Landscape Report suggests the current market size for lead acid batteries is around Rs 27,000 crore (\$4.2 billion) out of which stationary and motive applications in India takes the share of Rs 12,650 crore. The stationary and motive application segments are likely to grow by 14 per cent CAGR until 2020 and the forecasted market will be Rs 25,000 crore (\$4 billion).

Many Indian players are also exporting lead acid batteries to countries like Sri Lanka, Philippines, Indonesia, Afghanistan and Thailand.

Manufacturing of new technology batteries is still not happening in India. There are no Li-ion cell manufacturers in India but various companies like EXCIOM, ACME, Delta, Coslight and Future hi tech batteries established Li-ion assembly in India.

At least five major industrial groups in India are waiting for clarity in policy to foray into cell manufacturing. States such as Telangana, Andhra Pradesh, Tamil Nadu, Maharashtra and Gujarat are showing interest in

attracting investments from companies to set up units in this space.

According to India Energy Storage Alliance (IESA) research estimates, by 2020 there will be at least 3 companies globally with 25 GWh + annual production capacity and another 5 companies with 10+ GWh annual production capacity for Li-Ion batteries. The new projected capacity for 2020 is now over 400 GWh based on latest projections by IESA Research. India is targeting 5-10 GWh of annual manufacturing capacity by 2020.

Due to global competition and economies of scale, it is recommended that minimum capacity for a Li-Ion cell manufacturing is 1 GWh production per year. As per



estimates, for cell manufacturing, 1 GWh capacity would need an investment of up to \$300 million.

Looking at the potential India has to create a 10 GWh capacity by 2020, India could attract investments to the tune of \$3 billion with in next 3-4 years. And as this happens, ancillary development including module development, containers, transformers, inverters could need an equal amount of investment, taking the total potential to \$6 billion.

A few Indian companies are working on other battery chemistries like sodium based battery, Zinc AR batteries. By leveraging India's vast experience in software industries there are few companies who are creating Battery Management System and Energy Management

System for batteries & Evs.

2018 has already started witnessing the pickup of EV charging infrastructure deployment in various metro cities. Stationary energy storage market will also start seeing tracking with MW scale deployments for renewable integration as well as C&I applications. By mid-2018, India will have over 1 GWh of Li-ion battery pack manufacturing capacity.

We also anticipate that in 2018 at least two Li-ion cell manufacturing plants with capacity of 1 GWh or more will start construction in India with anticipated completion for the end of 2019 or early 2020, bringing India on the global map of Giga Factories. With the introduction of various EVs (across 2W, 3W, 4W and commercial vehicles), India will start witnessing the adoption of EVs in 2018, fueled by central procurement led by EESL and various state agencies. If we start deploying energy storage projects in a systematic manner this can create a huge interest in local manufacturing and system integration capabilities.

We believe that India cannot afford to miss the opportunity to tap into global energy storage ecosystem. IESA has set a vision to make India, a global hub for manufacturing of advanced energy storage systems, and we hope that with a little consistent policy direction and support in implementation, we can achieve this dream by 2022.

IESA is also working closely with various government agencies such as Ministry of New and Renewable Energy, Ministry of Power, Department of Science and Technology, Department of Heavy Industries and NITI Aayog for launching a comprehensive National Energy Storage Mission. We encourage all the key stake holders and industry leaders to join this effort to achieve this dream. For more information, please visit us at www.indiaesa.info or send email to contact@indiaesa.info

About the Author

Dr. Walawalkar leads the emerging technologies practice for Customized Energy Solutions globally with focus on energy storage, renewable energy, demand response and smart grid technologies as well as international markets. Rahul has been involved in evaluating economics of emerging technologies in deregulated electricity markets since 2004.

Creating Better Ways to Move India

Mr. Sachin Chhabra

Head of Procurement and Supply Chain India, Bombardier Transportation



At Bombardier, we look far ahead to see and shape the future of mobility. Bombardier Transportation is a global leader in rail technology and offers the broadest portfolio in industry. It covers full spectrum of rail solutions, ranging from trains to sub-systems and signaling. The company also provides complete transport systems, e-mobility technology and maintenance services. As an innovation driver, Bombardier Transportation continuously breaks new ground in sustainable mobility. It provides integrated solutions that create substantial benefits for operators, passengers and environment.

In terms of India, we have a railway vehicle manufacturing site and bogie assembly site at Savli near Vadodara, Gujarat. We have a propulsion systems manufacturing facility at Maneja, near Vadodara, Gujarat. We also have a Rail Control Solutions Centre for project delivery, product engineering and Information Services hub in Gurugram Delhi NCR, TCMS Centre in Vadodara, and an Engineering Centre in Hyderabad.

To make our locations in India run like a well-oiled machine, Supply Chain operations play an extremely important role and to manage that, we deal with our unique set of opportunities and challenges, specific to India. As a country, we are fourth largest nation in world from a Purchasing Power Parity (PPP) perspective. With around 1.3 Billion people, we have one of the youngest consumer base and rapidly expanding middle class, which makes a huge market for any organization in the world. While we as a country are young, ambitious, developing and fast paced but at same time, we got to fight our issues.

Some of challenges to manage supply chains in India are pertaining to quality of infrastructure which also has a direct impact on overall costs. If we compare

Supply chain costs, in developed economies like US it is in the range of 8-8.5% of GDP while in India it goes as high as 13%. Historically, we have had complex tax structures which never made your life easy. Today, with introduction of GST, it is a very welcome move for the industries. National highways in India comprise around 2 percent of the road network, but carry around 40 percent of the load. Shipments by roads generally take 2-3X time as compared to developed world. Ships can stay up to five days to dock at ports which can be improved significantly. Due to presence of large number of intermediaries, product costs get artificially boosted which decreases margins at the retail point of sales.

At Bombardier, by streamlining work processes, developing stronger relationship with suppliers and using technology, we are striving to take our company to next levels. Supply chain is a vital part of this value chain where our suppliers and contractors are supporting us thru concentrated efforts in providing value to direct & indirect customers and support our company's objectives. We invest time, money, resources in choosing the right supplier. Our choice depends on a wide range of factors such as value for money, quality, reliability and service. How to weigh up the importance of these different factors is based on our business' priorities and strategy.

We are also integrating concept of sustainability into our sales strategy as a specific focus area at operating level. We accordingly concentrate our sustainability activities on those parts of the value chain and interact where our influence on processes relevant to sustainability is the greatest. This reorientation is designed to optimize and standardize all supply chain and logistics processes, as well as to increase supply chain transparency.

In today's competitive landscape, though basics always remain the same, we need to improvise ways of operations to maintain a lead position in industry. At Bombardier, we aim to continuously optimize our supply chain and ensure efficient project and commodity management.

We engage our suppliers early in the process to ensure flawless execution of our projects and enhance competitiveness through standardization and innovation. Our plan is to establish strategic partnerships with suppliers and work out supplier development activities in future. As a strategic function, we deliver solid performance, leverage Bombardier's global scale and integrate suppliers in mutually beneficial partnerships.

At Bombardier, we are focusing on few initiatives such as 'Variablization' of costs which is a paradigm shift from pure cost reduction. Supply chains must be agile and flexible, taking full advantage of increased instrumentation, interconnectivity and intelligence.

Enhance real time information and sophisticated modelling to predict outcomes and take actions ahead of time over vanilla inventory reduction exercises. Smarter supply chain operations matching demand with sourcing and manufacturing capacity around the world, instead of running each facility separately. Today, through Intelligent business analytics, we can track and synthesize demand and supply trends to evaluate the 'what if' scenarios.

A supply chain network can be strategically designed in such a way as to reduce the cost of final product. But unfortunately, it is observed that many companies to begin with have a divide between procurement and supply chain operations that robs the organization of vital efficiencies. Bombardier has worked hard globally to firstly recognize that gap and then to close it envisioning sizeable benefits.

To leverage Bombardier's full scale and combined knowledge, we have implemented a centralized global procurement & supply chain organization, not just for Bombardier Transportation but also includes Bombardier Aerospace. India is a very important part of this organization, which has common goals & objectives tied to the overall objectives for the company. The organization oversees company's procurement, as well as their supply chains. It provides globally shared &

united teams speaking with one voice to our key suppliers. Our ambition is a robust & cash positive supply chain across all business segments.

In terms of manufacturing, Bombardier's commitment and investment has attracted world class rail suppliers to India making our local content and sourcing significant from India (varies from project to project as per customer requirements), created around 2500 direct jobs and 5000 indirect jobs and our suppliers setting up manufacturing facilities in India meaning less dependency for spares and preserving our forex reserves.

Digitization is not just the new buzz word for us but a new future. Digitization helps us to increase capacity and deliver more and increased automation in everything we do: preparation, driving and maintenance. Digitization is both a challenge and an opportunity for companies. With possibilities provided by Big Data, Bombardier is using fresh ideas from start-up scene to reinvent itself and whole concept of mobility.

Technology is also shifting the centre of gravity in the supply chain world. With delivery time frame getting shorter and shorter, material flow is at centre of this shift. Traditional warehouse model is getting obsolete. On production end of supply chain where upstream parts feed the factories & then to start downstream journey which is End to End supply chain. We see the transformation across the chain in near future.

Our focus is on Lean logistics and Advance warehousing for optimization of value chain along with collaboration with our suppliers thru online portals sharing information on real time basis. Supply chain of the future, while more complex, will be less expensive and more efficient with money spent across the four key variables - energy for transportation, labour, inventory carrying, and rent which will further undergo a notable change. At Bombardier, we are working on each one of them to keep our pencils sharpened always and stay competitive in the market.

About the Author

Mr. Sachin Chhabra leads all Procurement and Supply Chain activities for India across manufacturing sites, projects and for new business opportunities at Bombardier Transportation. Prior to Bombardier, Sachin worked for GE for more than 11 years across different geographies and businesses spanning India, Singapore and USA which was his last assignment before he relocated back to India.

Global Value Chains and the Position of Italian Companies



Ms. Viktoria Lopatina
Founder and Managing Director
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The world is changing at a speed and with a pervasiveness, between sectors and social contexts, which are unprecedented in history. Structural factors which determine the changes act on different levels, sometimes even very distant, and generate discontinuities, epochal leaps.

With globalization, value chains have become global, through new supply chains of production factors and through an international breakdown and relocation of part of production processes to the countries with low labour costs, with new circuits to procure production inputs.

In this context, the medium-long term choices relating to the strategic positioning of companies in the value chain, and the dynamics within the global supply chains, the so-called Global Value Chain, are becoming increasingly important.

The global value chain is the complicated organizational process of work - the result of globalization and the 'physical' and 'virtual' reduction of geographical distances - whereby the individual stages of the production chain are fragmented and carried out by suppliers and business networks scattered in different countries based on economic convenience and the level of competence and specialization of the various companies involved.

From the conception of the product to the direct sale to the final consumer, all the intermediate phases can be involved in a network of companies located in different countries.

The breaking down of barriers to trade integration and transport costs and new communication technologies have brought the most industrialized and least indus

trialized economies in the world to communicate with each other. This has made possible the exploitation of huge cost differentials, so that the conditions have been created for a transfer of production phases - in general the most labour intensive - from the first to the second.

Through this international diffusion of production activities, the formation of fractional value chains on a global scale (GVC) has accelerated exponentially.

To analyse the performance of countries and sectors in global markets, according to the studies of Italian National Confederation of Industries, the value of exports has become less significant, while it is increasingly useful to estimate the added value actually generated by foreign trade, that is, exchanges in added value, because they provide better the real contribution to world production and the positioning in it.

Using the added value instead of the gross data, Italy holds good comparisons with other countries and its world shares remain substantially unchanged.

The good overall result of the Italian manufacturing sector is associated with an intense and growing participation in GVC, especially, even if not exclusively, upstream of the supply chains, as a supplier of semi-finished products.

However, it is not a single recipe for successful participation in GVC. In particular, the activities with the highest added-value content are typically located at the two ends of the supply chains: at the beginning, those with high technology and research and, at the end, post-production ones, such as customer assistance.

Also according to the CSC (Confederation Study Centre) analysis, the specialization of the Italian manufacturing upstream of the chains proved to be a competitive advantage, also because it allowed to maintain the qualitative and technological upgrading of the suppliers within the national borders, with positive effects at sectorial and territorial level.

At the same time, however, the position at the beginning of the GVC has exposed the Italian manufacturing industry in a particularly marked way to the increasing penetration of Chinese imports, at various points in the production chains, with the loss of parts of the supply chains to the benefit of China and of other emerging countries.

Here we must take into consideration that the Italian industrial reality is more characterized by the strong presence of SMEs, which represents about 95% of the Italian companies. The limited size of the company (both in terms of employees and capital) constitutes, in the current global competition context, one of the main obstacles to internationalization.

This not means to ‘condemn’ the small and medium-sized enterprises, but simply to clarify that the SME is something different from the typical Italian micro-enterprise with less than 10 employees.

The Italian dimensional distribution is undersized compared to the European average, as well as the needs of an adequate competitive position in the international context.

Being involved into the global chains can be vital for Italian SMEs, because this allows not only to stimulate and encourage quality and productivity, but also gives access to global demand, which tends to be characterized by high volumes and broadly in potential growth.

In this case, competitive factors of success are probably not related to size, but rather to quality, customer service and flexibility to oppose to any changes in specifications, all factors where Italian SMEs are rich.

Generally, for European manufacturing, the growth of emerging economies represents an opportunity. In fact, the highly integrated European production chains have strengthened and lengthened during the crisis to capture the most dynamic extra-EU final demand; while in the rest of the world the international production chains have been resilient to the crisis, but they

have on average shortened, also due to the process of regionalization of trade in Asia (where the strong integration of production has intensified).

As a result, European countries became increasingly partners, rather than competitors, in global competition. This is particularly true for Italy and Germany, which specialize in different and complementary phases of production chains.

To improve the impact of international trade and EU trade policies on global value chains at the end of last year, the European Parliament approved in plenary session a draft resolution.

In this document, the European Parliament urges the European Commission to work actively within the World Trade Organization (WTO) in order to ‘increase transparency’ and ‘promote multilateral trade rules’, including those relating to ‘sustainable management of GVC.

The above can be achieved by taking into account transparency; respect for human rights, health and safety standards; protection of intellectual property rights; social responsibility on the part of companies, the requirements of social and environmental traceability along the entire production chain.

Therefore, globalization and global value chains, as an irrevocable result, are an irreversible phenomenon, which must be taken into account and even smaller companies with the help of their governments should adapt to obtain the greatest advantage.

About the Author

Ms. Viktoria Lopatina has specialised in International Commercial Law and by virtue of this, she has been involved in international trade, promoting relations between Italian and foreign companies. For several years she worked with countries such as Russia, Azerbaijan, the Baltic countries and others. Recently she has focused on the Indian market, devoting much time to the study of the market and the culture of doing business in India. Main sectors involved are: real estate, solutions for smart cities, furniture & design, fashion and tourism industry.

Viktoria has also taken care of relations with some institutions, promoting international relations. In the past, she organized some conferences, dedicated to the promotion of Doing business in some countries.

Textile SMEs and Global Value Chains: Bangladesh Context

Md. Salim Ullah

Senior Assistant Secretary, Ministry of Industries
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Nowadays, Small and Medium Enterprises (SMEs) attract much attention due to the recognition of their contribution in fostering economic growth, sustaining global economic upturn, generating employment and reducing poverty. It serves as the backbone of the national economies of many developing countries. There are about 9.0 million SMEs actively performing and contributing 25 percent of the total GDP, employing about 31 million people and providing 80 to 85 per cent of industrial employment and accounted for 28 percent of total employment in Bangladesh. SMEs have become a part of the global supply chain as more than 90 % of textile and its backward linkage establishments are SME and created job opportunities ranging from 70 % to 80 % of non-agricultural labor force (BBS 2013).

Bangladesh has demonstrated strong economic fundamentals with a consistent GDP growth 7.05% in 2016-17 and 6+ % over for the last twenty years. This growth in GDP is highly supported by a significant growth of textile SME's active participation in global value chain. The Definition of SMEs are readjusted to provide necessary policy support to these industries.

The definition of SME as per National Industrial Policy 2016 is shown in the following box

TABLE 1: DEFINITION OF SMEs IN BANGLADESH

TYPE OF INDUSTRY		REPLACEMENT COST (EXCLUDING LAND AND FACTORY BUILDING COST)	NUMBER OF WORKERS EMPLOYED
Small industry	Manufacturing	BDT 7.5 million to 150 million	31 to 120
	Service	BDT 1 million to 20 million	16 to 50
Medium industry	Manufacturing	BDT 150 million to 500 million	121 to 300. But for RMG/labour intensive industries, not more than 1,000
	Service	BDT 20 million to 300 million	51 to 120

SOURCE: NATIONAL INDUSTRIAL POLICY 2016

With about \$28.668 billion exports in 2017, Textile sector is the most vital industrial sector; they repre

sent 15 percent of GDP and around 82 percent of total exports. A recent McKinsey survey found that 86 percent of the chief purchasing officers in leading textile companies in Europe and the United States planned to decrease levels of sourcing in China over the next five years because of declining profit margins and capacity constraints; on the other hand they view Bangladesh as the next hot spot for sourcing of their ready-made-garment. McKinsey forecasts export-value growth of this sector to be 7 to 9 percent annually within the next five years and predicts the market be double by 2021.

This paper tells about the causes of such success in the perspective of Government's policy support. There are three synergic and intrinsic factors that triggered the textile boom in Bangladesh. They are *resources, opportunities and policy decision*. The resources include abundant labor forces, low cost energy and natural gas. Abundance in labor forces provides Bangladesh Textile industry with a competitive advantage in producing labor intensive goods. Self-sustained domestic market of 160 million with a growth rate of 1.5% is also a great support for the industry. In recent years Bangladesh has shown a reasonable increase in per capita income and improved life styles for middle class.

Bangladesh had had a tremendous *opportunity* to gain access to European and the U.S. market through MFA and GSM agreements for its *Ready Made Garments* (RMG). Bangladeshi entrepreneurs successfully took this opportunity to the fullest extent to expand and secure their markets. The policy decision made by the Government basically buoyed the Textile growth. The Government policy of liberalization of the economy encouraged private sector investments. The Government declared the Textile as a thrust sector

that led to introduce a support system for the Textile industry. The support system included Fiscal Benefits, Financial Benefits and Institutional Support.



Two of the most important resources, labor and power are abundant and cheap in Bangladesh. In compared to its competitors, India, Pakistan and China, Bangladesh has an advantage of cheaper labor and lower energy cost. Labor cost is only 23 cents/hr. whereas, in India, Pakistan and China the labor costs are 43, 41 and 89 cents/hr, respectively (as per 2006 stat). Gas burned energy cost in Bangladesh is less than two cents/KWH in compared to 9.33, 6.72 and 7.84 cents/KWH in India, Pakistan and China, respectively (as per 2012 statement of PDB). The Government declared the Textile as a thrust sector that led to introduce a support system for the Textile industry. The support system included Fiscal Benefits, Financial Benefits and Institutional Support. As a result, Bangladesh could elevate itself to the rank of **Steady Growth Suppliers** along with China, India, Vietnam, and Cambodia; Pakistan and Egypt as well, but with a good market shares.

The Textile Act helps to bring all sub sectors of textiles under one umbrella, to give one stop regulatory services for textile and allied industry. The Textile policy introduced a new tariff structure designed to stimulate the growth in Backward Linkage Industry (BLI). Tariff in spinning sector is strikingly absent. Whereas imported yarns and fabrics are heavily taxed to discourage imports and encourage local yarn productions. All these intrinsic factors had synergic effects on the textile growth in Bangladesh. Government has emphasized garment industry's steady growing at a more planned way than before. Significant no of circulars have been issued by the department to ensure international compliance. Though at the beginning garment factories were

established in an unplanned way and housed in converted and shared buildings. Later garments owners started relocating to safer buildings, taking into consideration the safety of workers. There are 8 specialize government export processing zones for the RMG industries exist in the country. Another 20 is on the pipeline. Besides, an industrial park is being set up in the district of Munshiganj for relocating non-compliant garment factories. The new industrial rule compels the entrepreneurs to make significant progress in compliance issues. In the past the workers had no ID cards and they were given no appointment letters. The number of women working in RMG sector has always been higher. They were not given child care facilities and maternity benefits. But all these facilities are provided now.

While industrial specialization was taking place, government felt the need for strong support of backward linkages to reduce dependence on imported immediate materials for RMG. The primary textile industry in the early 80s was mostly CMT. But during 1990 (FOB-1 period), there were strong growing demand for raw materials and the backward linkage industry started flourishing due to government incentives. Now the country is almost self-sufficient for knit fabric as more than 90 percent of knitwear fabric is manufactured in Bangladesh. Simultaneously, woven fabric manufacturing and processing capacity is also growing rapidly that has reached 3.58 billion meters per annum. Besides, currently we have around 11.65 million spindles installed that can produce up to 2.41 billion kgs of yarn per year. The sector is also almost self-sufficient for trims and accessories. So with the expansion of the RMG industry the backward linkage industries developed and have been playing an important role in reducing lead time and offering competitive price in the international market. The sector is ready to move forward towards FOB-2.

The role of international community is also much praise worthy. International buyers extended their hands to work in a coordinated way with the government through the Fire and Building Safety Accord (mostly European companies) and through the Alliance for Bangladesh Worker Safety (a group of mostly North American buyers). These groups have committed to inspect their supplier factories and develop plans for training and remediation. In March 2013, the government, business organizations and trade unions signed the National Action Plan on Fire Safety which calls for

action to improve legislation, expand labor inspection capacity and implement systematic inspections of all factories. The Alliance, the Accord and the National Action Plan have agreed to use a common standard for certification. By December 2017, Accord and Alliance have certified more than 3500 RMG industries as international compliance industries. The EU supports Bangladesh on education and skills development, and adopted at the end of 2015 the "Skills 21" programme for EUR 20 million on Technical and Vocational Education and Training (TVET) reform. The programme aims at strengthening the National Skills Development Strategy (NSDS) by improving the national qualifications frameworks, linking TVET with higher education, placing more emphasis on skills development for "green jobs", and by transforming existing institutions into a Centre of Skills Excellence with an associated National Instructional Materials Development Institute. Furthermore, it works with TVET institutions to introduce the entire reform package of new quality-

assured programmes, newly trained instructors, and management and services for career guidance and job placement. Good governance and human rights are an important crosscutting issue, and training and activities relating to decent work and workers' rights are covered by the project. The competency skills log book used in informal apprenticeship already contains a Code of Practice reflecting workers' and employers' responsibilities and expectations. Meanwhile, training programmes delivered in Enterprises Based Training (EBT) have modules including workers' rights and occupational safety and health (OSH). With the coordinated effort of all (the manufacturers, buyers and the government), the garment and apparel industry in Bangladesh generated \$28.669 billion exports in the fiscal year 2016-17 with a 10.21% growth from the year 2014-15 (EPB 2018). The growth was mainly attributed to policy support, increased productivity, entrepreneurs' resilience and improvement of workers' safety standards in factories.

Finally, Government's continuous effort to keep Duty free market access to Developed countries, EPZ and



SEZ's tonic though Foreign Direct Investment (FDI), image building of Bangladesh to attract Foreign Direct Investment (FDI), focus on Value Addition, Technology Up-gradation and capacity building, Human Resources Development, reducing the Cost of Doing Business in Bangladesh, policy support to improve textile production, awareness of International Quality Standards, introducing concept of on-the-job-training, introducing efficient management techniques, cash incentives, lower Interest rate to survive this industry, electricity and gas tariff, removal of Energy Crisis, exploration of new Export Markets, Bonded Ware house facilities, Duty free importation of raw materials of export in the RMG, avoidance of double taxation for joint venture projects, income tax exemption for up to three years for foreign technicians, Duty free facilities on dyes and chemicals, Duty free import of capital machinery, closer monitoring of leakage in the market, appointment of advisory committee to represent the industry to the government, improvement of research and

computer technology etc are some of the salient features of government policy support to ensure active GVC participation of Bangladesh's Apparel SME. To continue increasing the country's readymade garment exports in the global market, government is focusing on further boosting and promoting the country's readymade

garment sector by facilitating a healthier business environment, training more skilled workers, improving social compliance status, and improving coordination among the manufacturers, exporters and importers, with the goal of increasing Bangladesh's foreign exchange earnings. Now Bangladesh's vision is to achieve \$50 billion readymade garment exports by 2021.

According to Export Promotion Bureau (EPB), Bangladesh Garments Manufacturing Association (BGMEA) and Bangladesh Textile Mills Association (BTMA) the prominent features of SME Textile sector of Bangladesh today are:

- Value of total apparel export of 2016-17 FY is \$28.669bn where woven comprises of \$14.932bn and knit covers of \$13737bn: 90% of it came from

- SME Industries
- Value addition in knit & woven SME RMG are over 70% & 35% respectively.
- SME Textile sector contributes more than 12% in GDP. Over 75% of the export earning comes from SME Textiles & Textile related products.
- Due to favorable textile policy and SME-friendly monetary policy, attractive price is the most important reason for purchasing apparels from Bangladesh.
- Capacity is another biggest advantage of Bangladesh's ready-made-garment industry, with around 4500 SME textile factories employing about more than 3.6 million workers (of a total workforce of 74.0 million), ensures productivity to participate actively in global value chain
- 425 Yarn Manufacturing Mills, 240 Dyeing-Printing-Finishing Mills, 796 Fabric Manufacturing Mills are acting as SME Backyard Linkage Industries (BLI)
- Each year around \$500 million worth of capital machinery are imported by the SME Textile sector
- Investment in the Primary SME Textile Sector: over 4.5 billion US\$. (last 5 years)
- Around 90% yarn demand for knit RMG & 35-40% yarn demand for woven RMG are met by Primary Textile Sector (PTS).
- All local fabric demand & the yarn demand for SME handlooms are also met by Primary Textile Sector (PTS).
- Backward & Forward linkage industries provide employment for more than 5 million people where 80% are female; 99% of them are SME
- PTS industries producing around 1200 MW power through Captive Generator.
- Textile SME's generating huge cliental base for Banking, Insurance, Shipping, Transport, Hotel, Cosmetics, and Toiletries & related economic activities.

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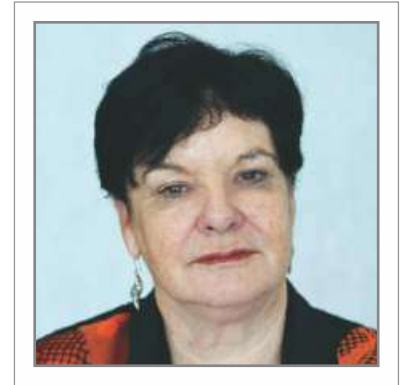
About the Author

Mr. Md. Salim Ullah is responsible for formulating strategies and draft policies to boost up industries in the country. Mr. Ullah is serving as an architect of National Industrial Policy 2016, a facilitator on industrial promotion and progress, and a regulator to implement time bound action plan under NIP-2016. Currently he is working on formulating three policies; namely, National Motorcycle Development Policy 2018, National Leather Policy 2018 and Ship Building Policy 2018. He has received specialization training on the promotion of SME industries from National Institute for Entrepreneurship and Small Business Development (NIESBUD), India and National Productivity Organization (NPO) South Korea and is currently acting as a National Focal Point for Business Initiative Leading Development (BUILD). Currently he is pursuing research on Global Value Chain and Prospects for Handicraft Industries under Professor Kauffman of Institute of International Trade, Adelaide University, South Australia.

Rewrite the Rules of the Global Economy to Rebuild Trust with Working People

Ms. Sharan Burrow

General Secretary, International Trade Union Confederation



The global economic system is a construct that represents a system of inequality by design.

Despite the fact that the world is three times richer in terms of global GDP than it was 30 years ago, we have historic levels of inequality. Eighty percent of the world's people in the 2017 ITUC Global Poll say that the minimum wage is not enough to live on. And 85 percent agree that the rules of the global economy should be rewritten

Corporate greed is out of control. People are not fooled. Eighty percent acknowledge that the economic system favours the wealthy and 61 percent that corporations have more influence than governments on setting rules for the economy.

Decent work has broken down in most countries when the majority of the world's workforce are living on the edge.

Even in developed economies, more than one third of people are forced to survive on low wages with insecure and exploitative contracts of employment. More than 70% of the world's people have no or inadequate social protection.

In global supply chains, up to 94 percent of the workforce who contribute to the wealth of a handful of corporations are a 'hidden workforce' where employment responsibilities are simply outsourced through obscure manufacturing, logistics and services supply chains.

CEO's know that their global operating model is based on low wages and often exploitative working conditions, with insecure and often unsafe work, yet few take responsibility for the due diligence required by

the UN Guiding Principles on Business and Human Rights, let alone set up the grievance procedures that could lead to remedy.

And now we see increasingly both informal work, recruitment fees and modern day slavery appearing in our supply chains

This model of labour arbitrage has not only driven a global exploitation of the workforce underpinning global trade but ensured growing inequality and ironically contributed to global economic stagnation with a global slump in labour income share resulting in shrinking markets.

It is a perversity that the language of "risks and rewards" is used to justify both soaring boardroom pay packets and growing income inequality at work. The workers most frequently compelled to take genuine risks-to life, to limb, to health-are those who receive the lowest financial rewards.

Low pay is in all probability the clearest indicator of the degree of health of any society. Low pay affects your choices.

It influences whether you work more overtime, extra shifts, report an injury, take sick leave. And it leaves you in jobs that typically have the insecure, dirty and dangerous hallmarks of risky work or scratching a poverty existence from multiple jobs.

The recipe for reducing inequality for working families and ensuring decent work is simple:

- a minimum wage on which you can live
- social protection, and
- compliance.

Freedom of association and collective bargaining rights are fundamental enablers. Workers need the added volume of a collective voice to make themselves heard.

Governments must act. Companies must face up to their responsibilities.

The social protection floor is endorsed by all international institutions - so where is the political will if governments can't spend 6 percent or less of GDP on critical social services - unemployment income, pensions, child protection, maternity protection, health, education and housing.

Where is the political will if governments refuse social dialogue and ignore legitimate demands of working people through their union? Demands for decent pay, pensions people they can live on and the protection of public services that are vital for any society.

Where is the political will if companies are not required to pay a minimum wage on which people can survive and thrive?

This would only require an increase of US \$50 a month in the poorest countries in Asia, where major corporations make up to US \$17,000 profit from every worker in the supply chain. It would require about the same in Latin America and less in Africa.

The price of decent work, reduced inequality and resulting global growth is cheap. And the economic payoffs would be equally significant. Increasing disposable income is the best way to boost development and ensure inclusive prosperity.

Even if a living wage were passed on to the consumers, it's affordable - less than 3 cents on a melon would provide a living wage for women in Honduras or less than 2 cents on a banana for workers in Guatemala. And if we paid just 5 cents more for a \$5 bunch of flowers we could double the wages of Kenyan workers.

But consumers are not responsible for the fact that the workforce is in trouble and inequality is growing. It is governments who fail to make and enforce laws and corporations and investors who flout laws or lobby against stronger compliance in order to reap short-term profits instead of long-run sustainable returns. Workers' rights cannot be negotiated away. Hence the

demand of the International Trade Union Confederation is for governments to follow the example of France and mandate due diligence for all corporations throughout their supply chains. They must themselves ratify and implement ILO labour standards and ensure compliance.

They must ensure minimum wages, on which people can live with dignity. This requires costing of necessary items to ensure that wages allow for decent living standards, including: food, housing, transport, clothing, medical expenses, education expenses, household bills, essential care costs and contingencies for emergencies.

And they must guarantee social protection that covers benefits for medical care, unemployment, old-age pensions, employment injury and disability, maternity leave and care, survivors' benefit and child and elderly care.

The G20 Labour Ministers meeting in July 2017, declared that violation of workers' rights could not be part of the competition.

All employers must take responsibility for decent work for all their workers, whether directly employed or through contractors in supply chains.

Inequality, just wages and decent work with social protection provide the foundation for greater equality and for growth. Collective bargaining can then drive greater distribution of productivity and profit creating even more equal societies.

The rules of the global economy must be rewritten to grow sustainable economies.

About the Author

Ms. Sharan Burrow was re-elected for a second term as General Secretary of the International Trade Union Confederation at the ITUC World Congress in May 2014.

Previously President of the Australian Council of Trade Unions (ACTU) from 2000 - 2010, she served as inaugural President of the ITUC from its foundation in Vienna in 2006. Sharan has led union negotiations on major economic reforms and in labour rights campaigns.

The ITUC is the world's peak labour union body and has grown to represent 181 million workers in 163 countries and territories with 340 national affiliates.

Role of AI and Newer Technologies in Future of Global Value Chains



Mr. Prabhakar Chaudhary
Managing Director, HAL Robotics

‘Made in the World’ describes most of the goods and services consumed today even though we don’t inscribe it, at the same time there is hardly anything ‘imported’ anymore. The three pillars of GVC are cost economics, production network and technological capability.

Enterprises want the fastest possible transfer along with visibility during transit at the lowest possible cost. Technological evolution viz. Cloud computing, Artificial intelligence, Machine Learning, IoT, Robotics, so far has capability of enabling the entire value chain fast track and frictionless.

While initial success comes from the product itself, Enterprises need effective technological process for sustainable and larger success. The decline in computing cost over cloud and the anytime anywhere access of information has been major accelerator in GVC over the last decade however the full potential of cyber physical connected system and distributed computing is yet to be unleashed.

AI, Robotics Cutting Across Global Value Chains

AI has already changed the world for many of the early adopters. Its rapid adoption over the next years or so will completely change both the nature of employment and the face of business.

It will also give rise to new profit streams from capital equipment and better environmental performance for existing infrastructure. AI is algorithms making decisions based on data received from machine, assets, goods, people, etc. on how to adjust a forecast based on changing demand.

Globalization is fundamentally changing the environment of business decisions. Global Value Chain (GVC) is one of the complex system which involves people and process across various levels where strategies need to be in place now to ensure the technology is exploited to its full potential.

It is one area where we could ultimately see full automation happening thereby disrupting the entire value chain behaviour process of today. Sensor based monitoring and control are the fundamental pillar of smart infrastructure.

IoT powered by machine learning and artificial intelligence is spearheading a fundamental transformation of the supply chain industry. It is also about learning and action-based capabilities that simulate autonomy rather than process-oriented intelligence.

Important Issues for Newer Technology Success in GVCs:

Flows and Friction in a Global Economy

Global Value Chains (GVCs) are transforming global trade by breaking production into steps that can be carried out in different countries. An interesting and unique aspect of GVC is that they are relevant for both high-end products and services as well as relatively low-value-added ones.

The GVC constitute the activities that demands inter-firms network. The ability to effectively insert into GVC is vital for successful implementation of technology.

Inter-firm relationships and coordination of activities

at various levels in the chain takes place. This coordination is achieved through the setting and enforcement of process parameters to be met by various stakeholders in the chain.

Governance can be exercised in different ways and different parts of the same chain has to be governed in different ways.

Many goods are traded in markets through a series of arm's-length market relationships between firms. The parameters are defined solely by each firm at its point in the chain.

Fusing technology for interoperability and transfer of information in real time is pivotal for the success. Now that the globe is 'Global' and every nation has cross-national functional integration with rest of the globe.

The worldwide coordination of production and supply has emerged as a complex harmonization process.

Access to Real-Time Data

Software solutions are beginning to apply machine learning capabilities that can automatically detect errors and make course corrections, while processing real-time data streams.

The more real-time data the more it will help in faster and accurate prediction resulting in enhanced decision making. AI is relatively useless unless it's able to add value to support better decision-making.

Self-learning logistics systems improve their algorithms as they get more data over time. The system works by recognizing patterns in data, analyzing them and issuing accurate insights for action.

AI - Human Collaboration

Businesses do intend to make great strides with artificial intelligence but in reality, it is the baby steps towards progressive technology would determine the success of AI in any environment.

Because of the complex nature of logistics operations machine human interaction and collaboration is extremely important for the success of AI driven logistics. Whether the logistics involves goods, services

or just information, we can in no way handover our operations to algorithms and remove the human element.

The key to success would lie in how modestly algorithms can fuse into existing process and empower human for enhanced decision making.

AI need not and should not operate in a 'black box.' The UI must give users visibility to decision criteria, dissemination impact and enable them to understand issues that the AI system cannot solve.

The users, regardless of type, must to be able to monitor and provide additional input to override AI decisions when necessary.

However, the AI system should be able to drive the system itself and only engage the user on an exception basis, or allow the user to add new information the AI may not know at the request of the user.

Anticipatory Logistics

The common objective is to get the right product to the right place at the right time so the cost of holding inventory is minimized.

Anticipatory logistics are based on predictive algorithms running on big data. The practice allows logistics professionals to improve efficiency and quality by predicting demand before a consumer places an order.



Anticipatory logistics benefits all entities in the supply line by anticipating demand, enabling businesses to ramp up resources before the demand spikes.

Warehousing

A newer development in self-learning systems is intelligent warehouses. It recognises trends and incidents, connects the data to specific entities such as orders or customers and launches pre-pack instructions.

Warehouses are looking to automate and interconnect the processes within, from using Robotics for packaging and sorting to Machine Learning for optimal loading of freight containers.

Location Intelligence, like geo-coding, environmental factors, local governance are used to map and assess active sites that could serve as potential warehouse locations.

Not only will such advanced technology know when shelves are empty, but more importantly, it will predict what will happen next.

Another common example is AI and robotics that check on stock levels to reorder and restock as needed. Over time, self-learning enables the system to improve its algorithms for even more accurate responses.

Autonomous Delivery System

A ground-breaking change, little away but unavoidable. With so many top companies investing big time and money in the development of drones and autonomous vehicles, it will be fascinating to observe the impact this disruptive technology will eventually undoubtedly have over the next decade in logistics.

We must expect this unprecedented corporate R&D project to impact all our lives over later years.

So far, the development of autonomous driving technology is revealing implementation challenges for the logistics and supply chain industry.

However, taking a slightly different approach, we will soon see assisted driving technology which can learn behaviour and recognise patterns and then make appropriate decisions to driving scenarios not encountered previously in near future.



These are interesting developments that could have an impact much sooner than people believe.

Enhancing Productivity and Profits

One of the biggest growth areas in which AI can make a significant difference to the bottom line is in intelligent forecasting systems. AI will predict more accurately on trends and product attributes by

analysing third party data drawing from open internet thereby helping faster and enhanced decision making in real time which would mean forecasting is no longer be so much stab-in-the-dark guess work.

Conclusion

AI offers greater promise in the future. It will still need careful monitoring and the knowledge of experienced logistics and operational professionals to ensure that it is being used to its maximum potential.

The beauty of AI-based solutions is the incremental learning and continuous improvement with time getting sophisticated as they gather more data and more behaviour data.

The sooner one starts, the better the results will be visible in future. With the right AI solution in place, one can outpace the competitors and be well positioned for reaping even bigger rewards of AI's promise tomorrow.

It's a disruption which will impact all involved either in positive or negative manner depending on the position taken today. There are significant benefits and dramatic results waiting for companies that focus on the fundamentals and put AI to use today.

About the Author

A visionary in the field of IT and Data Sciences, Mr. Chaudhary is the Managing Director of HAL Robotics, a Gurgaon-based organization in the field of Internet of Things (IoT) & Artificial Intelligence (AI), creating thinking machines. Propelled with the vision of connecting the world through intelligent devices, enhancing safety and faster decision making, Prabhakar is responsible for the everyday functioning of HAL Robotics, whilst also charting out the successful road to scaling up and success.

Best Practices to be Adhered by SMEs to Integrate in GVCs



Dr. Saon Ray

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Global value chains (GVCs) have proliferated in developed and developing countries since the early 1990s.

As countries integrate their production in Global Value Chains, the question that arises is whether there are gains only for lead firms or SMEs that supply to the lead firms? While the literature is abound with the potential benefits of both lead firms and SMEs, there are some caveats that have to be kept in mind particularly in the context of SMEs.

The gains for firms integrating in GVCs depend on the extraction of value or the value addition that these firms provide.

This is important for SMEs since they can get locked in low value activities with little prospects for upgrading. The question that is pertinent to ask is how can firms avoid this?

Firms in order to integrate with GVCs, particularly SMEs need to be able to perform certain tasks. The tasks that SMEs can perform vary according to the sector.



For example, in the garments sector the tasks include cutting, sewing, buttonholing, adding trims or embellishments etc., ironing, packing and so on.

Traditionally, small firms have performed these jobs. In recent times, however, some of these tasks like stitching are being performed by robots in Cambodia.

In light of these developments, SMEs need to specialize in non-routine tasks that cannot be performed through automation.

SMEs in order to enter and participate in GVCs need strong financial backing. SMEs are small and lack economies of scale.

However, they have to be competitive in order to serve lead firms. SMEs face several problems such as access to finance, reliance on technologies brought in by lead firms, limited knowledge of ICT, skills in dealing with customers, knowledge about potential market opportunities etc.

Some of these problems can be overcome if SMEs come together in the form of a cluster.

One of the key factors limiting GVC integration for small firms is the bargaining power they enjoy vis-à-vis lead firms; SMEs can increase their bargaining power through such endeavors.

The most important barrier faced by a SME is the high transaction cost that it faces. This can be alleviated if knowledge and learning from these transactions incurred by a firm can be conveyed to others in the cluster.

The weak innovation culture is another important



factor that limits the prospects for upgrading by the SMEs.

In order to remain competitive, firms need to innovate. This does not mean that all firms need to be involved in cutting edge research; most firms in developing countries do not have the resources to do so.

However, improvements in simple routine procedures can be tried and if successful, can lead to lowering of costs for firms undertaking it.

The problem in the case of India has been in institutionalizing such efforts without which the innovation cannot be sustained.

Such attempts can also be undertaken by a group of firms collaboratively: there are instances of biotechnology industry in building innovation clusters in India.

The government of India has created a number of support programmes to commercialize and absorb technology in SMES.

The Prime Minister's Task Force on MSMEs set up in 2009 to reflect on the concerns of MSMEs and formulate an agenda for necessary action.



The recommendations of the working group on science and technology for SMEs has been implemented through the 11th Five Year Plan (2007-2012).

The working group had recommended the continuation of technology business incubators and technology innovation centers.

The Foundation for Innovation and Technology Transfer (FITT) has been the industry- interface organization linking academic institutions with industry for the transfer of technology.

Since finding collateral for funding is a problem for SMEs, the RBI has permitted collateral free lending up to a limit of Rs. 5 lakh for all enterprises covered under the MSMED Act 2006.

Several initiatives are available from the Exim Bank for export lines of credit for the leather, gems and jewellery and textile sector SMEs. While there are many other schemes, awareness of such schemes also remain limited for most SMEs.

The role of the industry association in this regard is paramount: they can act as a conduit of information and knowledge for the SMEs while at the same time highlight the problems and challenges faced by the SMEs to the government, academia and other stakeholders.

Thus a partnership between all the stakeholders can help in SMES realizing their true potential. SMEs contribute enormously to the Indian growth story but by channelizing their resources, they can achieve greater heights.

About the Author

Dr. Saon Ray, Senior Fellow, Indian Council for Research on International Economic Relations (ICRIER), New Delhi. Her areas of interest include Microeconomics, International Trade, Industrial Economics, Energy Economics, Climate Change Adaptation and Applied Econometrics. She has worked in the area of trade policy, technology transfer, foreign direct investment, efficiency and productivity of firms, energy and climate change related issues. She has a Ph.D. in Economics from the Jawaharlal Nehru University, New Delhi on the role of intellectual property rights in transferring technology to developing countries. Her book *Global Value Chains and the Missing Links: Cases from Indian Industry* is forthcoming from Routledge.

Development and Rationale for Regional Trade Agreements



Mr. Zhongzhong Hu

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GVCs are more regional than global in nature and regional trade agreements (RTAs) are the central of today's international trading system.

At first glance, RTAs appear counterproductive to the World Trade Organization's (WTO) principle of Most Favored Nation (MFN), as applied to lowering trade barriers evenly and indiscriminately.

RTAs on the other hand, represent a clear kind of Trade Bloc, with the inherent notion of discrimination. However, as global competition has moved from sectors to tasks, a deeper degree of trade arrangement is urgently in need.

RTAs are being embraced by many WTO Members as trade policy instruments and, in the best of cases, as complementary to MFN.

Increasing trend of RTA proliferation

According to the WTO database, the total number of



RTAs in force have increased from 50 in 1990 to 277 in 2016.

Rather than merely focusing on establishing intra-regional RTAs, states formed RTAs with parties that belong to other regions.

Within 143 established RTAs covering only trade in goods, 86 are intra-regional and 57 are extra-regional ones.

For the total of 133 established RTAs covering both goods and services, 39 are intra-regional and 94 are extra-regional ones.

And there is only one RTA covering service. It is noteworthy that there were few RTAs covering both goods and services by the year 2000, but the growth rate has accelerated noticeably since 2015.

Further research indicates that the number of RTAs between developed countries are relatively small, comparing to the numbers among developing countries and numbers between developed and developing countries.

The pattern would be explained by the fact that trades in developing countries usually face higher barriers and weaker domestic institutions relative to advanced economics, that RTAs become a commitment device for border and behind border polices to encourage GVC participation.

Reasons for signing RTAs

When international trade takes the form of final product exchange or there is less frequent international trade in the product/task, general trade

arrangements (WTO) would suffice.

However, GVC integration puts a higher requirement on classic trade policy more than ever. Trade agreement are crucial for reducing two costs:

- 1) Accumulation effect: goods produced in GVCs have to cross national borders several times and incur tariffs several times.
- 2) Magnification effect: the costs are paid out of the share of value added.

In today's world, trade cost accumulates at fast rate after multiple cross-border entries and it often exceeds the value of tariffs.

Compared with MFN, RTAs are more open. It allows enforceable regulations on some policies of current WTO mandate and provisions outside the WTO mandate.

For example, in some RTAs, tariffs on trade in goods have been reduced to zero, intellectual property protection has been tightened, technical barriers to trade have become lower, dispute settlement mechanisms have become more effective and regulatory policies have become more transparent.

For developing countries, RTAs can be used not only as a means of removing trade barriers but also as a commitment mechanism to demonstrate the transparency, predictability and consistency of policies.

Participation in deep RTAs usually generates positive impact as research by Osnago, Rocha, and Ruta (2016) have showed that deep RTAs boosted GVC integration and increased bilateral trade value added, especially for south-south and south-north country pairs by examining country pairs at different deep of preferential agreement and level of development.

Channels RTAs are effective

As explained by Osnago, Rocha, and Ruta (2016), North-South deep trade agreements offer an anchor to boost GVC participation of developing countries by providing a commitment device for border and behind-the-border policies.

Since tariffs between developing countries are often

still high, South-South preferential trade agreements affect GVC participation mostly through traditional trade liberalization. Reasons for signing RTAs can go beyond that.

RTAs can increase the outsourcing ratio of developed countries to developing countries through various channels:

- Deep RTAs can cover more policy measures related to trade and investment and taking into account the specific needs of member countries.



- RTAs' measures to eliminate tariff barriers, border facilitation and liberalization of trade in services are conducive to reducing the magnification effect of trade costs.
- RTAs' protection of intellectual property rights will ensure that invention patents and research achievements of developed countries will not be infringed, enabling them to outsource the latest products to developing countries for processing and manufacturing.
- RTAs rise quality standards which often result in upskilling of workers, and better employment conditions, and product quality.

RTAs can increase the imports of intermediate inputs for developing countries

High-end components, patented technologies and knowledge-intensive productive services in developing countries' general trade exports also depend on imports, but many factors hamper the import of these intermediates. Such as developing countries' own trade barriers and protective measures, and developed

countries' restrictions on the export of high-tech intermediate products to developing countries due to intellectual property considerations.

Tariffs among RTAs member countries are generally below the non-discriminatory tariffs set by the WTO, significantly reducing the cost of importing spare parts.

RTAs also enacted a more stringent intellectual property protection clause than the WTO, enabling developed countries to safely transfer their latest R & D outcomes.

RTAs can boost the trade production network among developing countries. Outsourcing and import of intermediate goods are important ways to strengthen the value-added trade linkages between developed and developing countries.

Value-added trade between developing countries depends mainly on the production network. However, as intermediate products are repeatedly imported and exported among countries, very small trade barriers will generate significant transaction costs and hinder the development of trade networks.

RTAs help to reduce the trade barriers between developing countries and promote the development of production networks. The production process will operate on a finer division of labor, faster learning process and larger economies of scale.

A study by Athukorala and Yamashita's (2006) found that RTAs promoted the bilateral supply of intermediate products between East Asia and Southeast Asian countries to form a production network complementary to each other. Miroutou et al. (2013) also found a positive correlation between the bilateral trade network index and the RTAs participation rate on the North American Free Trade Area (NAFTA), the European Union and the Association of Southeast Asian Nations.

RTAs can increase FDI among member countries through investment creation and investment diversion effects.

- RTAs' govern foreign investments with a pre-entry national treatment and a negative list management system, which will greatly simplify the procedures and scope of cross-border investment and reduce



- investment barriers and risks.
- Deep RTAs forms the bedrock of modern rulemaking process by creating the transparency, predictability and consistency to foster trade and investment.

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About the Author

Mr. Zhongzhong Hu is Assistant Professor of the School of International Trade and Economics at University of International Business Economics (UIBE) where he has been since 2015. From 2016 to 2018 he served as core technical group member of APEC TIVA project. In 2016 he was a Visiting Professor at the Ministry of Commerce of the P.R. China (MOFCOM) and a member of MOFCOM Global Value Chain Expert Working Group.

Importance of Regional Value Chains for India



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The Global Value Chain or GVC is the new buzz word in India for boosting export growth and Commerce Minister Suresh Prabhu has mentioned its importance in his speeches frequently.

Around 70 per cent of the world trade is structured within GVCs of multinational corporations. In GVC the contribution of each participating country in the making of a product is small and is related only to value addition.

The product is conceptualized and designed in an advanced country-- like the Apple I- phone which is designed in the USA. The parts are made in different countries but the final product is assembled in China and is sent back to the US for marketing.

GVC has become all the more necessary because selling products that are labour intensive are becoming difficult for many developing countries and they are facing falling returns unless the producers are able to upgrade the quality of products through higher value addition.

This problem is particularly relevant to SMEs of developing countries which generally have limited pricing power and limited capabilities and options for upgrading their products.

The way they can export is to link up with international production networks but then they have to meet a wide range of increasingly stringent global standards with respect to quality, price, timely delivery and flexibility.

Only some countries have been successful in integrating themselves in the GVC and China is one of the foremost participants. Almost all big retail chains of

the world get their products made in China even though shifts to other locations can be seen in recent times.

India has been able to participate in GVC in gems and jewellery, automotive parts and services. But why is it that India is not able to integrate into GVC for more items? The reasons could be many ranging from lower wages like in the garment industry of Bangladesh and the high skill levels of Bangladeshi women workers.

Bangladeshi garment producers are linked to big retailers in the EU and US like GAP, Sears, Zara, H&M etc. Other reasons could be logistics, infrastructure and ability to deliver consignments on time due to lesser regulations.

Instead of entering the GVC, India could easily enter a Regional Value Chain (RVC) in garments and in many other items with neighbouring countries especially when there is Free Trade Agreement with the countries within the region in place.

For Regional Value Chain to take off, India will have to improve its cross border infrastructure, remove tariff and non tariff barriers, speed up the implementation of rules for harmonization of regulations and technical standards which could make the trade between countries of the region more fluid.

RVCs don't demand strict norms like in GVCs because the goods cater to specifics of local market demand and consumption patterns which may be similar for the entire region.

They may be less dynamic than the GVC in transforming the economy and pushing for faster industrialization but they have resulted in better logistic systems while

incorporating indigenous firms in some regions of Africa. They have led to enhancing integration, productivity and division of labour which is beneficial for the participating countries in terms of employment and skills available.

Once RVCs are established the end products can also be exported globally, particularly to developed countries' markets.

The participation in RVCs has been found to lay the foundation for consolidating and upgrading production processes in the participating developing countries so that they can ultimately be linked to the next step of entering the Global Value Chain.

There can be growth poles for the RVC and India can be one of the growth poles in the sub region comprising of the BIMSTEC (Bay of Bengal Initiative for Multi Sectoral Technical and Economic Cooperation) member countries—India, Sri Lanka, Bangladesh, Nepal, Bhutan, Myanmar and Thailand.

Thailand can be another growth pole, in case a FTA materializes between the seven member countries. These growth poles which operate like hub and spokes already are the region's financial capitals and attract more investment than the others.

They can serve as headquarter of the RVC and could take the lead in the deployment of resources, primarily by channelling foreign and intra-regional productive investments into the region.

The two growth poles can create an important pathway to trigger manufacturing growth in the region which is mainly agricultural that will transform lives and enhance incomes of the people in the sub region.

The RVC can be built taking into account the local regulatory and development requirements and can channel knowledge and transfer technologies within the region.

The RVC will comprise of local players from SMEs and they could be part of the new industrial learning process and act as an interface between the global value chain multinationals and the regional network of producers who will be instrumental in preparing the region's industrial base for the upgradation of skills and infrastructure.

Problems may arise because many of the countries in the region are competitors and are not complementary allies. Most are producing the same kinds of goods.

Even so, in the BIMSTEC sub region, there can be cooperation between Myanmar, India, Sri Lanka and Thailand in Gems and jewellery production since Myanmar, Sri Lanka and Thailand produce very good quality gems.

India specializes in cutting and polishing gem stones as well as making gold, silver and studded jewellery. Similarly, in production of bamboo items which can include furniture, cloth and artefacts, there could be a RVC between North Eastern region of India, Myanmar, Thailand and Bhutan.

For herbal products, there could be RVC between Nepal, India and Bhutan. For garments, there is a big potential for RVC between Sri Lanka, Bangladesh and India. Many garment producers of India have already shifted base to Bangladesh. In leather goods, there is potential RVC between India, Bangladesh and Thailand.

Apart from spreading industrialization, there will be employment and skills development in the sub region and the participating countries will be able to transition from rural to urban economy.

The main danger to GVC however is automation and Artificial Intelligence. More and more developed nations are trying to upgrade their technology with robotics and AI that reduces the need for outsourcing of products to cheaper locations that use cheap semi-skilled labour.

The advanced countries will only demand very highly skilled labour for which few developing countries are ready. That is why for regional development and welfare of the people of a sub-region like BIMSTEC, developing RVC is most important.

About the Author

Ms. Sengupta is working with ORF's Economy and Development Programme. Her work focuses on the Indian economy and development, regional cooperation related to the SAARC, BRICS, ASEAN and EU groupings, social sectors like health, education and unemployment, and women and development.



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Global Value Chains, Regulations, Standards and Sustainability



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Trade barriers to market entry in the high income economies have moved from the purview of the nation state to transnational corporations and international agencies. International trade is hence increasingly driven by global value chain (GVC) standards and global regulations which suppliers are required to meet. As lead firms became more dependent on extended global supplier chains they find it necessary to drive standards through their value chains in order to drive down their costs, to enhance their products, to protect brand identities, to safeguard final consumers, and to ward off reputational damage,.

International trade, driven by global value chain dynamics, is increasingly competitive. This creates major pressures on firms and countries to develop dynamic capabilities and to upgrade their skill base in order to ensure survival and future growth. Economic upgrading and innovation are hence crucial to achieving sustainability goals.

Simultaneously there are growing demands from governments and civil society for social and environmental standards in global export markets. Meeting them provide the social licence for lead firms to operate in these markets, so these lead firms are charged with ensuring their suppliers are compliant. Hence producers have to develop the capabilities to respond to these multiple *Triple Bottom Line* challenges of economic, social and environmental upgrading.

To ensure these standards are achieved throughout the chain's operations, and transform policy into practice, lead firms have adopted three responses:

- **Sink or swim in the supply chain** - in non-

- demanding markets lead firms adopt a passive policy of publishing their requirements, and then simply verifying supplier performance.
- **Lead firm supply chain management** - in demanding markets requiring Triple Bottom Line conformance, lead firms may have to engage in Supply Chain Management (SCM) programmes, and Supplier Development Programmes (SDP), to assist suppliers attain the required standards. But this support comes at a cost and requires capabilities which some lead firms do not have.
- **Using intermediaries** - lead firms encourage suppliers to obtain assistance from specialised intermediaries or contract them to run SDPs, particularly with small farmers/enterprises.

The regulations and standards which determine market entry in high income markets impact on achieving the Sustainable Development Goals (SDGs). Inclusion is central to the SDG agenda. Hence the question is to what extent value chain standards help to build producer capabilities in low and middle income economies to achieve the SDGs,

The case study evidence from a review of a number of low and middle income countries and sectors in which small producers and unskilled labour play important roles suggests complex and often contradictory sustainability outcomes:

- Regulations affecting market entry, promulgated by governments and inter-government agreements, are mandatory and automatic exclude non-compliant supply chains.
- Lead firms in GVCs use standards to target both an improvement in the competitiveness of the chain and the social licence to operate in global markets.

- There is extensive evidence from a range of sectors in low and middle income economies in Asia, Africa and Latin America that certification to regulations and standards does indeed contribute to social inclusion - - wages have frequently risen, working conditions improved, health and safety enhanced, environmental outcomes progressed, and in some cases, unionisation strengthened. They have also enhanced environmental footprints and economic profitability.
- Standards intensity in GVCs is affected by the nature of the final market - that is, low income consumers and economies are less demanding of social and environmental standards. Since regional markets have lower barriers to entry to those lacking the capabilities to achieve necessary standards

However, at the same time, the evidence shows that regulations and standards can also be excluding, undermining the attainment of the SDGs:

- Products may not meet regulatory requirements and cannot be imported. Or lead firms set productivity, social, health, or environmental standards which suppliers are unable to meet, hence excluding suppliers from global markets, or particular market niches.
- Many producers suffer from “passive exclusion”. That is, due to the demands which certification makes for worker skills and organisational capabilities, many small farms and firms are unable to meet these technical demands of incorporation. Another form of passive exclusion are financial barriers. The pecuniary costs to certification and the costs of reorganising production in the firm may be too high for small producers to bear.
- But there are also processes of “active exclusion” in GVCs arising as a consequence of complying to standards. Some firms in the chain concentrate on those procedures which are monitored and take active steps to retrench workers who are marginal to achieving standards, and to draw on suppliers operating in the informalised sector who fall below the certification radar.

Hence, in summary, there is considerable evidence that meeting standards and regulations has contradictory effects. Whilst it contributes to the achievement of many of the SDGs and to the building of dynamic capabilities amongst many producers, at the same time, standards can also be exclusionary in character,

impacting on the least advantaged producers.

What are the policy conclusions from this review of the role of standards and regulations for developing country producers?

❶ Standards and regulations involve multidimensional development processes, and consequently conflicts and trade-offs between objectives are an unavoidable fact of life.

❷ Policy stakeholders need to implement steps to correct for market failures which limit the capabilities of producers to meet standards and regulations. This requires them to fill information gaps, to help cover the costs of certification for small and marginal producers, and to assist producers to develop the upgrading capabilities to meet these standards.

❸ There are additional challenges in assisting the capacities of poor and marginalised producers (such as women, small producers and distant producers) to meet these standards. This requires focusing policy support to the least advantaged in the value chain.

❹ Civil society actors (community based organisations and NGOs) play an important role in defining and monitoring those standards which address the social licence to operate, and assisting disadvantaged and marginalised producers develop the capabilities to meet them.

❺ Private and public stakeholders must counter the fact that standards compliance hides the eviction and informalisation of producers, and hence must act to counter these excluding developments including through rigorous monitoring programmes to ensure that standards are driven throughout the chain.

❻ Regional markets, with lower technical, social and social standards have lower barriers to entry and open up important regional value chain opportunities for smaller farmers and firms who lack the capabilities to achieve the standards necessary to participate in global markets.

About the Author

Professor Kaplinsky has provided policy advice to a large number of governments, international institutions and firms on the nature and determinants of global competitiveness.

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Cognitive Supply Chains - The Next Frontier



Dr. Ganesh Natarajan
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The world of manufacturing, distribution and logistics has changed beyond recognition in recent times. Industry 4.0 is the watchword of the times with the World Economic Forum having warned CEOs in 2017 of the sweeping changes that could be expected in technologies, processes, culture and the management of data within and beyond the enterprise.

Consulting firm PWC has suggested that Industry 4.0 will lead to the digitization of all physical assets and integration into digital eco-systems with value chain partners. McKinsey & Co has called out four disruptions which make up 4.0 - data volumes. Computational power and connectivity, business intelligence and analytics capabilities and human-machine interaction advances like touch systems and augmented reality.

Ubiquitous connectivity, devices connected by the billions to the internet and new Internet of Things (IoT) applications are all providing the push to make the cyber-physical future of the manufacturing world a reality. However, smart factories and heavily automated shop floors cannot by themselves provide the push to the manufacturing economy that is so necessary for a sustained economic boom to happen in the country. Automated Warehousing, IT enabled logistics and digitally transformed supply chains hold the real key to this future.

Speaking and sharing ideas with experts at the Supply Chain and Logistics conference in Dubai, which is fast emerging as a global hub for transporta

tion in our part of the world, I found it interesting that while extensive automation has been implemented in the storage and movement of materials, the opportunities in cognitive logistics and supply chain planning is still at a nascent stage all over Asia and even in the advanced systems prevalent in the US and Europe. This may be because warehouse automation and the use of augmented reality enabled picking systems and virtual reality driven learning systems have become part of any state-of-art storage and retrieval systems, but rapid advantages in artificial intelligence, machine learning and cognitive technologies have yet to be fully utilized in reimagining and redesigning the supply chains of the future.

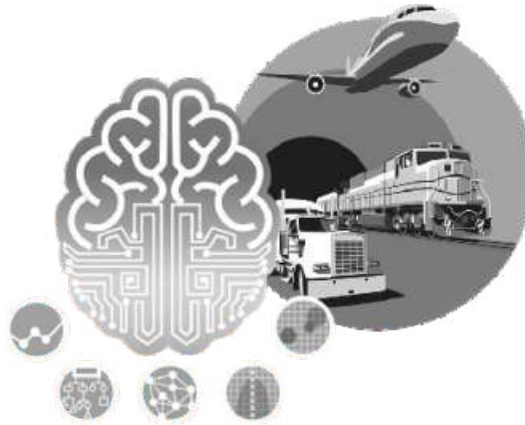
One of the main reasons for the lag in the adoption of cognitive transformation in supply chains and logistics has been attributed by expert Christine Taylor to the large numbers of people and firms that have to work together to make a supply chain work. The different levels of sophistication of manufacturers, brokers, transporters, retailers and customers makes it difficult to have a wide sweep implementation in a supply chain the way it can and does happen in a factory or warehouse.

What has changed today to inject a new wave of optimism that cognitive logistics and supply chains are indeed going to happen in the very near future? Businesses are getting comfortable with setting up and using large data lakes and warehouses and deploying predictive and



prescriptive analytics solutions.

Omni-channel has become the standard for most manufacturers and retailers and with multiple companies, intermediaries and consumers interacting on an intelligent supply chain platform, the opportunity to understand the behavior of every participant on the platform and learn with every transaction is enabling supply chain planners to cost-effectively plan and optimize delivery solutions for each category of customer on the platform.



Digitally enabled supply chains enable instant interchange of data amongst all partners and enable the learning from every transaction to be leveraged by all participants.

Companies like DHL, Walmart and Amazon are already practicing anticipatory logistics where demand is being forecast and sometimes even created by intelligent suggestions to customers. They are responding to customer impatience with long delivery lead times and manufacturer eagerness to produce in intelligent anticipation of demand.

Artificial intelligence has a key role to play in this anticipation process with the entire sequence of demand forecasting, manufacturing, transportation and storage planning and maintenance of transportation equipment riding on the ability to use AI well and deploy machine learning to provide adaptive knowledge through the supply chain.

Self-learning logistics processes are enabled by algorithms that recognize patterns and initiate action across the logistics chain. These actions could include volume and timing of shipments, inventory and stocking suggestions and pricing to optimize product offtake and movement across the supply chain.

The ultimate solution to the ongoing demand for faster movement of people and goods worldwide is of course the 'Hyperloop'. But till such time that hyperloop movements become the standard, cognitive supply chains that treat a customer as a single entity across multiple channels, learn when transport or inventory

disruptions could occur and ensure visibility and transparency from supplier to buyer will keep getting more sophisticated.

Biased decisions will be avoided by machine management of most routine tasks, with intelligent handovers to experienced humans only when there are extreme and unforeseen circumstances including weather, unions and other

'force majeure' situations.

One major question that is coming up in the corporate discussion was naturally the potential loss of jobs in traditional manpower-intensive services sectors including logistics. The reality is that as systems get more complex and provide rewarding outcomes for all participants, the opportunities for bright human intervention in the design and implementation process will always exist and indeed grow! Nowhere will this be more evident than in the area of cognitive logistics.

More and more variables will have to be analysed to make decision making more accurate and as monetary savings accrue to all participants through better planning of manufacturing, stocking and distribution and customer delight peaks, the demand for customer experience designers, customer behavior analysts and new service imagination and design experts will soar.

Are our traditional education systems ready to take existing employees and career seekers into this new world? Probably not, but new interventions in the skilling process are happening to make this happen.

All in all, we are in for exciting times and the winners of tomorrow will be those who use both human and artificial intelligence and machine learning to build cognitive supply chains. The borders between organisations and even countries will be defined by the far-reaching sweep of digital and the world will never be the same again!

About the Author

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GVCs Will Need to be Restructured in the Automated AI world



Dr. Anil Vaidya

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The past decade has witnessed increasing goods and services businesses around the globe, crossing national boundaries at ease. The spread of internet, easy accessibility and digital economy has changed the way the businesses are conducted. The financial world and the digital products are at the forefront of globalisation. Not to be left behind, the goods manufacturing businesses have adopted outsourcing and offshoring. Some of the large aeroplane manufacturing processes are distributed across various countries around the world. A number of locations across different continents add value to their part of contribution effectively creating Global Value Chains (GVCs). Such GVCs have come onto existence in many sectors. The petroleum industry, for instance, has been known to have multi-location value creating activities for a long time. Their down-stream and up-stream activities are carried out by different entities in different locations, although each activity may be considered complete in every respect.

The value chain as expounded by Michael Porter specified five interrelated activities of inbound logistics, operations, outbound logistics, marketing and sales and services. The GVC takes this concept further across multiple locations, in multiple countries and continents sticking to the original principle of creating competitive advantage. Companies have dispersed their activities of design, production, marketing and sales across the globe, where there was specific gain that could be gauged in doing so.

Global Value Chains strengthened over past two decades

Over past several decades as communication and transport capabilities evolved the internationalization of businesses came into practice. Many authors have written in the past about differences between interna-

tional business and multi-national business. Most pointed out that the multi-nationals do investments in other countries while international businesses focus more on export and import. Multi-national companies concentrated on doing business and earning profits providing goods and services locally. Many adapted to local requirements and tuned their offerings. The success of such strategies is evident in the growing number of highly successful companies.

As the corporations and their managers realized and understood capabilities and talent spread around the countries, the concept of outsourcing developed. Offshoring was certainly to follow to take advantage of lower costs and higher capabilities. The Global Value Chains evolved to capture value created by different parties across globe. The businesses realized that one can create components in multiple locations and then assemble in another location and may sell in a third location, taking advantage of cost-arbitrage and talent, capabilities available around globe. The manufacturing capability of China attracted a number of companies and China became the global factory. India, on the other hand, became a global service provider in the world IT. Brazil and Russia have also become major players in GVC over the past few years. This led to a very critical component of the final products/services being manufactured or delivered. Activities happening in various locations need to be functionally integrated. Though at disparate locations, all formed part of a common product or service. From that perspective the designers and producers needed to be totally aligned and to work within the given framework of cost, quality, quantity and time. The production of Boeing airplanes has been exhibited as a strong case of Global Value Chain. Apple iPhone parts are manufactured in various countries, assembled in China and finally shipped to US is cited in OECD GVC study (Pilat, 2013).

Governance

The delays in ultimate delivery of the Boeing Dreamliner have been cited as a case to emphasize the functional integration requirements of such a product and the capabilities required to run such a GVC. It brings forth the requirement of stronger control over entire GVC. The monitoring and control need to be organized in a manner that supports the original cause of implementing GVC to add more value to the prime manufacturer. In the absence of tighter control, overruns of all kinds result in withering away profits. Forbes published an article on Dreamliner case (Denning, 2013). On the other hand Toyota is known to exert tight control on its value chain.

The GVC motivates companies aim to restructure their activities taking advantage of their global presence and capabilities available. It is clear that one needs specific talent and capabilities to manage GVCs. The Global Commodity Chain (GCC) and GVCs have been studied in relation to their governance structure (Yeung, 2007). Walmart has been quoted as an example of buyer-driven commodity chain while automobile companies are considered producer-driven commodity chains. One needs to consider Global Production Networks (GPNs) in the same breadth. Taiwan became an OEM to begin with in electronic sector, now it has established itself in Design and Brand. The Retailers and branded marketers govern their chain more as relational networks while the automobile manufacturers govern their chains more as captive networks. Governance literature shows importance of participation of retailers, merchandisers, farmers and global contract manufacturers through global sourcing networks (Ponta & Sturgeon, 2014).

Dawn of a New Era - Automation, IOT, Artificial Intelligence

The Value Chain Mapping and Analysis activities of the GVCs with the introduction of automation, IOT and Artificial Intelligence paints a different picture of transforming world. Leaders of tomorrow's and today's digital world will be extremely tech-savvy people (Dutton, 2017). They will take advantage of the technology advances to restructure and operate GVCs in a more effective and efficient manner, in order continue deriving benefits.

Automation

Automation of the processes has been known to reduce

cost and improve quality consistently and evenly. The robotic implementation in factories results in cost-effectiveness and efficiency. To the extent that automation achieves such gains, the attractiveness of outsourcing activities to offshore locations on account of cost arbitrage reduces. However, it still does not diminish the possibility of creating such an automated facility in low cost location. The deciding factor will be the cost of transportation, considering that the automation may reduce the gap between high cost and low cost locations. Services are getting delivered to customers via RPA, digital agents and BOTS, enhancing service capacity and meeting customer demands 24X7. With the spread of internet, such service is designed in one country, assembled using capacities in multiple locations and delivered in a completely different country. As an example consider the simple example of software development where developers are in some Asian country, the data center in cloud somewhere and users/customers are in US.

Internet of Things

Maersk has implemented IoT in its reefers to improve efficient and effective transportation of goods requiring special conditions of such as temperature and humidity around the globe. IoT deployment turns out to be a value creating activity for its logistic part of value chain. DHL is doing lot of work with IoT and Machine Learning and it expects to do more granular planning, procurement to deliver more segmented supply chain solutions (Coward, 2017). Many factories have deployed IoT extensively to monitor production activities. Today, large electronics plants and refineries can be completely run with the combination of automation and IoT, even from a remote location.

Artificial intelligence

Walmart joining hands with Google is an excellent example where the AI capabilities of Google with fulfilment capabilities of Walmart will change the retail space significantly (O'Marah, 2017). Amazon also has the capability of AI and fulfilment to evolve a new picture of the retail industry. Both Google and Amazon through their Home with Assistant and Echo with Alexa implemented strong voice based interaction with customers. The Natural Language Processing and Understanding (NLP & NLU) capabilities attract customers. At the back end, both have developed strong analytics through machine learning and artificial intelligence which will dictate the way retailing is done in years to come.

The IoT deployment creates huge amount of data that gets processed through artificial intelligence to understand and predict possible events that would unfold in the future. IoT combined with AI is expected to create large cost savings especially for the companies that run large fleets of vehicles. Only the tyre pressure adjustment suggested by IoT+AI improves fuel efficiency significantly, cutting fuel cost for the company. While such an instance may be a small part of overall GVC, considering that same solution can be implemented globally influences value creation across locations.

Service sector, especially technology services and technology based services see new opportunities in the GVCs. The artificial intelligence along-with automation and IoT makes it possible to restructure and deliver services, at times even dynamically, from various locations. Adidas and Nike will be making use of analytics and AI to directly address customer demands (Garcia, 2017). Currently, Nike manufactures in 600+ factories located in 40+ countries around the world. Using data-driven analytics. It now plans to predict customer requirements and manufacture those where and when they are required.

Recent events

The nationalism and patriotism will have its impact on GVCs over period of time. The EU initiatives and 'Made in USA', or 'Make in India' branding are some of the examples of raising national borders. General Motors has announced a Suppliers Park to be opened in Texas outlining its strategy to place suppliers closer to the manufacturing sites, simultaneously bringing the jobs and activities home (MH&L, 2017).

Many western developed countries are making policies that curb easy transfer of talent around the globe, effectively reducing ease of human capital flow. Also changes in taxation related laws are going to impact the global value chains. In 2015 EU restated the policy of recording and taxation of the sales of digital products & services which meant the value creation points in the GVC needed to be reassessed, although the global chain itself may not be affected.

Implications and conclusions

It is apparent that the GVCs will keep evolving with the technological opportunities, also adapting to political and national requirements. The leaders will need to be tech-savvy, ready to make quick changes as events

develop. The organizations will need to show agility and dynamism to adjust and realign quickly. It will be imperative to invest significantly in the human capital development.

Integrating new technologies in the organization infrastructure and adopting bimodal approach will be the way forward for the world dominated by automation, IoT and AI. Continuous GVC mapping and analysis in the light of technology advances and changing national policies will open new vistas for the organizations. GVCs will need to be restructured with newer opportunities to continue to reap benefits.

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About the Author

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Netherlands - A Leading Logistics Hub in Europe's Regional Supply Chain



Mr. Remco Buurman
Chief Executive Officer
Holland International Distribution Council

NDL or HIDC (Holland International Distribution Council) promotes the Netherlands as a preferred logistics hub for local and foreign companies catering to the entire European market. NDL is a private, non-profit organization representing 300 companies in the Dutch logistics industry. In an interview, Mr. Remco Buurman, CEO of NDL offers his views on the strengths of the logistics industry in the Netherlands.

What are the major logistics hubs in the Netherlands?

The top three Dutch hubs for warehousing and distribution are West Brabant (Bergen op Zoom, Roosendaal), Central Brabant (Tilburg, Waalwijk) and North Limburg (Venlo-Venray).

- **West Brabant** - Strategically located between the Port of Rotterdam and the Port of Antwerp, the West Brabant region has nearly 30 million square feet of warehousing capacity.

Twelve percent of West Brabant's 725,000-person population works in the logistics or supply chain sector, and its universities graduate roughly 100 Bachelor in Logistics students per year. (Source: WDP)

- **North Limburg** - North Limburg is home to Venlo, a top region for food and agriculture logistics and the most versatile horticultural region in Europe. Located at the German border, Venlo is a key location for cargo transshipment. (Source: CBRE)
- **Central Brabant** - At the heart of the Netherlands' "transport corridor," Central Brabant is home to Tilburg, the largest inland logistics hub in the Netherlands.

Central Brabant's multimodal transshipment points, barge terminals and rail terminal play key roles in its logistics infrastructure. (Source: CBRE)

What are the emerging hubs for warehousing and distribution in Netherlands and what are their key drivers?

Future development and action in terms of warehousing and distribution will continue to happen in the aforementioned Dutch hotspots. These spots will remain "hot" in the future thanks to their proximity to European consumer gravity points, multimodal connections to the ports of Rotterdam and Antwerp, excellent road connectivity and supportive government that assists in the development of coveted XXL locations. These locations are also rich in logistics talent and offer competitive costs.

What multinational companies are utilizing them? How are these sites helping multinational companies move freight into, around, and out of Europe?

- Some of the most prolific lifestyle companies have operations in the Netherlands in order to benefit from the excellent Dutch logistics network. Apparel companies like Abercrombie & Fitch, Michael Kors, Forever 21, Under Armour, American Eagle and PVH—which owns Calvin Klein and Tommy Hilfiger—have European distribution centers in the southern part of the Netherlands.
- In addition to Tesla—which has its only European distribution center in Tilburg—high tech companies including Dell, HP, Cisco, Texas Instruments, IBM, Cisco and Google all have major European logistics facilities in the Netherlands.

- In the life sciences sector, the Netherlands' logistics infrastructure has attracted Abbott, Medtronic, Stryker, Boston Scientific, Medivators, Amgen, Genzyme, Edwards and Johnson & Johnson.
- Cold chain companies in the agriculture and food industries also invest in Holland. Agro Merchants acquired three companies in recent years in the Netherlands and just opened a new cold store in the Port of Rotterdam. Lineage Logistics is following suit by acquiring major player Partner Logistics.
- Dutch sites are ideal for moving freight into and around Europe due to the country's road connectivity and multimodal connections to the ports of Rotterdam and Antwerp. The Netherlands' central location, abundance of logistics talent, experience in logistics and competitive cost also support its robust warehousing and distribution sector.

What are the key latest developments in the logistics sector of the Netherlands?

The Netherlands logistics sector received a significant boost this August when the U.S. Department of Defense announced that the Netherlands will be responsible for the storage, shipping and management of spare parts for more than 400 F-35 fighter aircraft in Europe for the coming decades.

The Royal Air Force Logistics Center Woensdrecht (LCW) will be primarily responsible for the storage of the equipment.

In addition, some 70 Dutch companies will benefit from this contract, which is expected to generate hundreds of millions of additional revenue for the Dutch logistics and distribution sector.

The Pentagon chose the Dutch proposal because of its highly integrated approach that will keep logistics costs low, stocks optimized and the availability of F-35 devices ensured.

Explain the impact of e-commerce on the logistics sector in the Netherlands? Also, explain how Brexit has affected the logistics sector in the country?

- **E-Commerce** - The rapid rise of the e-commerce industry is a major driver of logistics activity in the Netherlands.

Online stores, which saw an annual revenue increase of 14.4 percent in January 2017, and the online revenue of brick and mortar stores, which rose by 20.8 percent, depend on efficient logistics hubs in order to fulfill the demands of their customer base.

Many of the aforementioned companies with operations in the Netherlands fulfill their online orders from Dutch warehouses. Thanks to a central location, tax benefits and an experienced workforce, the Netherlands has emerged as a regional and global hub for e-fulfillment.

According to a study commissioned by logistics association NDL/HIDC, the Netherlands has a competitive edge over other European logistics hubs in terms of both cost and quality.

- **Brexit** - As the United Kingdom continues to move forward with Brexit, many companies are developing plans to move stock from the UK to mainland Europe. As a mainland hub for logistics, the Netherlands continues to be a gateway to Europe.

Mention some of the sustainability (eco-friendly) practices being adopted by the logistics sector in your country.

In keeping with the Netherlands' long tradition of sustainability, the Dutch logistics sector embraces renewable energy innovation.

Four major Dutch airports will be fully powered by wind energy by 2018, and the Port of Rotterdam and surrounding companies are dedicated to reducing carbon emissions by 98 percent by 2050.

About the Interviewee
Mr. Remco Buurman has been the Chief Executive Officer of NDL since 2014. He has studied Economics and Business Administration at the Erasmus University in Rotterdam and has extensive experience in promoting the Netherlands as a location for foreign companies.

Among these companies, many have set up their European logistics activities in the Netherlands. Prior to his role as Managing Director at NDL, Remco was the Managing Director of the Rotterdam Investment Agency for 5 years and before this, he was the Area Director for the Netherlands Foreign Investment Agency (NFIA) on the west coast of the United States in San Francisco for over 5 years.

Prior to this, he was a consultant in the field of logistics for several years.

Value Chain Analysis of Organic Coffee Sub-sector In Nepal



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Abstract

World-wide popular beverage-coffee is getting popularity in Nepal since 1938 in terms of production, processing and consumption of organic coffee. Crop has been grown by 22000 growers of forty hilly districts of Nepal within 1000 to 1600 metre altitude where Western and Central Development Region have major share. A study was carried out in Sindhupalchowk, Kavre Palanchowk, Gulmi, Palpa and Shyanja Nepal between 2015 to 2017 with an aim to analysing the value chain of coffee in terms of functional and economic linkage among the growers, pulp operators, secondary processors and consumers. The study identified six key players in organic coffee: input suppliers, fresh cherry producers, pulp operators, secondary processors exporters and consumers. Economic analysis of fresh-cherry producer, pulp operator and secondary processor showed that cost of production of fresh cherry, dry parchment and green bean was NRs 69.03/kg, NRs 411.46/kg and NRs 478.40/kg, respectively. Benefit cost analysis of these major players of coffee VC showed that coffee enterprise was a profitable business with BC ratio 1.20, 1.04 and 1.24 respectively. Study provided evidence to the

argument that secondary processors were most benefited in the value chain.

Keywords: Coffee, cost of production, economic analysis, profitability, value chain

Introduction

Nepal has 79 year's experience in organic coffee production since a Monk brought Arabica coffee in Gulmi district from Burma in 1938. Crop has been grown by 22000 growers of forty hilly districts of Nepal within 1000 to 1600 metre altitude where Western and Central Development Region have occupied 59% and 30% share on 1750 Mt coffee production in fiscal year 2013/14. Upto 2013 period, total area, dry parchment and green parchment production was reported 1911 ha, 429 ton dry parchment, 343 ton green beans (MoAD 2014). According to NTCDB, Studies reported area expansion by 15% and green parchment by 25% within the decade time (Shrestha 2012 and NCTDB 2017). Although tea marks the traditional drink of average Nepalese, because of the growing coffee culture in the cities - which stems from rapid opening of café houses - coffee is gradually becoming popular beverage in

Nepal. The main countries where Nepalese coffee is exported are Japan, USA, Netherlands, Germany and Korea. Irrespective of higher scope of exporting branded coffee from Nepal, a few traders and processors primarily were governed the present marketing channel because of the insufficient market information, quality improvement, insufficient pre-processing facilities, scattered and remoteness of coffee plantation area in Nepal. Nepal Coffee is considered specialty Coffee for its distinct flavor aroma and body as it is grown in higher altitude, away from the main Coffee growing Capricorn and Cancer belt (beyond 230 latitude). Coffee produced in Nepal is organic & fair-trade and is readily accepted as a “Specialty Coffee” in specific international markets (Kattel 2009, PACT 2012, Rayamajhi and Bhandari 2017 & NCTDB, 2017).

based on purposive-random sampling. Sindhupalchowk, Kavre, Gulmi, Palpa and Shyanja were purposively selected as they are the major coffee producing districts. Sampling frame was prepared in each district after discussion with key informants from District Coffee Producer’s Association (DCPA). Researcher selected 60 samples from Ishowk (n=20), Sangachowk (n=20), Shikharpur (n=10), Talamaran (n=5) and Barhabise (n=5) of Sindhupalchowk district. Likewise, the researcher selected Chyamrangbesi (n=20), Nayagau (n=20), Jaisithowk (n=10), Pokharichauri (n=5), Phoksintar (n=5) of Kavrepalanchowk district. Similarly 42 samples from Aapchaur Gulmi, 50 samples from Shyanja (Arjunchaupari) and Palpa (Madanpokhara) districts. These respondents were randomly selected based on the sampling frame made with the help of local staffs. Similarly, 5 pulp operators, coffee producing cooperatives, grinders, and DCPA staffs were selected as key expert in each district in order to receive updated information and data. Three years of data regarding price and quantity of input supplies & sold product; labour cost; production & processing cost; marketing cost; demographic and socio-economic information were collected via household survey. Field survey was carried out in January-March 2015 (in Shyanja, Palpa and Gulmi), October 2016 (Sindhupalchowk and Kavre Palanchowk) to March 2017 (Gulmi).

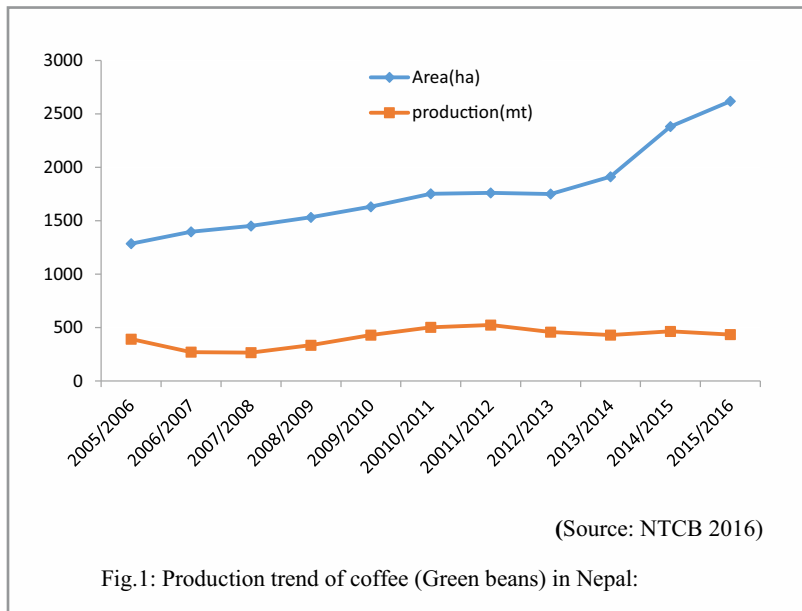


Fig. 1: Production trend of coffee (Green beans) in Nepal:

This article has highlighted value chain analysis tool in coffee subsector to identify efficiency and competitiveness of coffee entrepreneurs, the activities enabling a competitive market environment. Further, the researchers are examining the profitability at each step of the coffee VC so that it could enhance coffee business in a sustainable manner. Identification of operational service providers of the coffee sector involved in each section of the value chain and their interrelationships with other actors would add value of the study.

Study Methodology

Study area and sample size: Respondents were selected by using multi-stage sampling procedure

Value chain mapping: Study drew schematic chain map as a graphical representation showing the major actors and their relationship along with the sequence of activities involved in the value chain. It applied both qualitative as well as quantitative methods in order to show the linkage and operation of the chain from input supply to processing and marketing (UNIDO 2009).

Cost of production: Cost of production refers to the summation of all the costs which are incurred while producing goods or services which in return increases the revenue of a firm. Cost of production (CoP) of fresh cherry, dry parchment and green bean was estimated by using following formulas. While only variable costs were considered in calculating CoP of fresh cherry, both fixed and variable costs were taken into account in case of CoP of dry parchment and green bean.

i) Cost of fresh cherry production*CoP of fresh cherry (Rs)*

$$= C_{harvesting} + C_{cultural} + C_{manure} + C_{protection} + C_{irrigation} + C_{other}$$

Where,

 $C_{harvesting}$ = Cost of labour used in harvesting (Rs) $C_{cultural}$ = Cost of labour used in intercultural operations like weeding, pruning and in intercropping (Rs) C_{manure} = Cost of FYM/organic manure used (Rs) $C_{protection}$ = Expenditure on plant protection materials (Rs) $C_{irrigation}$ = Cost of irrigation (Rs) C_{other} = Other cost of cultivation (Rs)**ii) Cost of dry parchment production***CoP of dry parchment (Rs)*

$$= C_{Dep} + C_{Cert} + C_{FC} + C_{labor} + C_{water} + C_{packaging} + C_{Other}$$

Where,

 C_{Dep} = Depreciation cost (Rs) C_{cert} = Certification cost (Rs) C_{FC} = Input cost of fresh cherry (Rs) C_{labor} = Labour cost (Rs) C_{water} = Cost of washing (Rs) $C_{packaging}$ = Cost of packaging materials (Rs) C_{other} = Other cost of processing (Rs)**iii) Cost of green bean production***CoP of green bean (Rs)*

$$= C_{Dep} + C_{Cert} + C_{DP} + C_{hulling} + C_{sorting} + C_{electricity} + C_{fuel} + C_{packaging} + C_{Other}$$

where,

 C_{Dep} = Depreciation cost (Rs) C_{cert} = Certification cost (Rs) C_{DP} = Input cost of dry parchment (Rs) $C_{hulling}$ = Labour cost for hulling (Rs) $C_{sorting}$ = Labour cost of hand sorting (Rs) $C_{electricity}$ = Electricity cost (Rs) C_{fuel} = Fuel cost (Rs)

$$C_{\text{packaging}} = \text{Cost of packaging (Rs)}$$

$$C_{\text{other}} = \text{Other cost of processing (Rs)}$$

For our study, depreciation rate of 10% was used.

Gross margin analysis: A gross margin is a simple and quick method to analyse the performance of a farm business. It is calculated by deducting the total variable cost gross return as shown in formula below.

$$\text{Gross margin (GM)} = \text{Gross return (GR)} - \text{Total variable cost (TVC)}$$

Where,

$$\text{Gross return (GR)} = \text{Sales quantity of coffee product} \times \text{Price of coffee product}$$

Net profit: Net profit refers to net earnings after deducting all the expenses not included in the calculation of gross margin as in the following equation. It can also be expressed into percentage.

$$\text{Net profit} = \text{Gross margin} - \text{Total Fixed cost.}$$

Benefit cost analysis: Benefit cost analysis is the benefit of the farm business relative to its cost, expressed both in monetary value. The Benefit cost ratio is calculated by taking the ratio of total revenue and total cost. Here in our study, the total revenue denotes gross income and total cost represents summation of all the Fixed Cost and Variable cost including the marketing costs as well. It was calculated by using following formula.

$$B/C \text{ ratio} = \text{Gross income} / \text{Total Cost}$$

If B/C ratio is greater than 1, the farm business is profitable.

If B/C ratio is less than 1, the farm business is not profitable.

If B/C ratio is equal to 1, the farm business is indifferent to profitability.

Price spread: Price spread from farm to retail is the difference between the farm gate price and the price paid by the consumer at retail market. It exhibits the processing and marketing charges. The formula for calculating price spread can be expressed as in following formula

$$\text{Price spread} = P_R - P_F$$

Where,

P_R = Retail price

P_F = Farm gate price

Producers' share: Producers' share is the ratio of farm gate price to retail price expressed in percentage. The formula for calculating Producers' share is expressed in following formula. Share of other actors of VC on retail price was calculated accordingly.

$$\text{Producers' share } P_S = \frac{P_F}{P_R} * 100\%$$

EMPIRICAL FINDING AND DISCUSSIONS

Socio-economic and demographic analysis: The socio-economic and demographical characteristics of the respondents showed that majority of the respondents were male (75.50%) and belonged to Brahmin/Chhetri ethnicity (69.17%). About 61% of the sampled HH population were economically active and most of the respondents went to school for 1-5 years (32.50%). Majority of the household had farming background (87%) growing other crops besides coffee and were organised under cooperatives (64%). Almost 80% said trained on coffee production except in Gulmi where only 45% took training.

Value chain mapping: Value chain mapping of coffee in study area is illustrated in Figure 1 and 2 which showed the interrelationship between the actors, their

functions and the institutions providing the enabling environment at each level. Figure 1 presents the situation of Kavrepalanchowk and Sindhupalchowk district while Figure 2 depicts the situation of Gulmi, Palpa and Shyanja districts. The study revealed that the key players of the coffee value chain were input suppliers - supplying seedlings / equipment / other inputs; coffee producers - producing fresh cherry; pulping operators or primary processor - producing dry parchment; secondary processing units - producing green beans/ roasted beans/ powder coffee; market actors delivering it to consumer; and consumers - drinking coffee. Number, volume and average price in various levels of micro-actors are simultaneously indicated in the figure. The enabling environment providers were NTCDB, NARC, DADO, CTDS, CCCUL, NCPA, financial institutions, development and certification agencies.

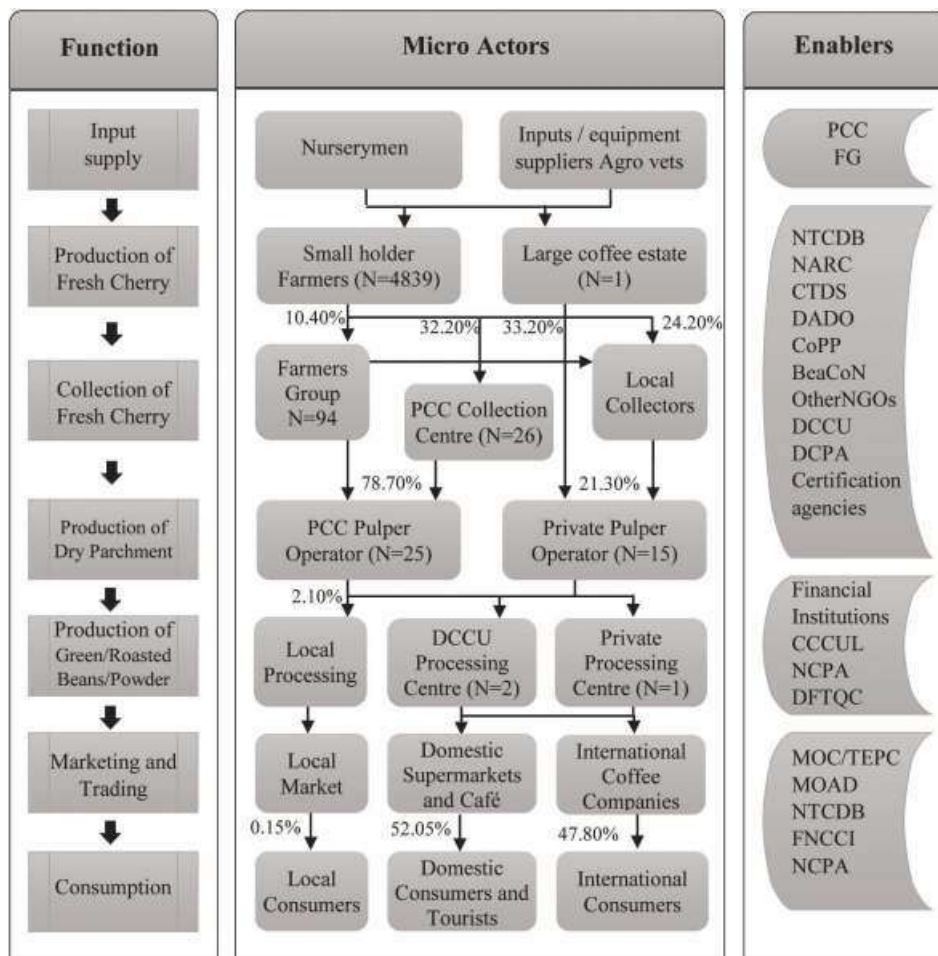


Figure 1: Value chain map of coffee in Sindhupalchowk and Kavre Palanchowk district
Source: Field survey (2016)

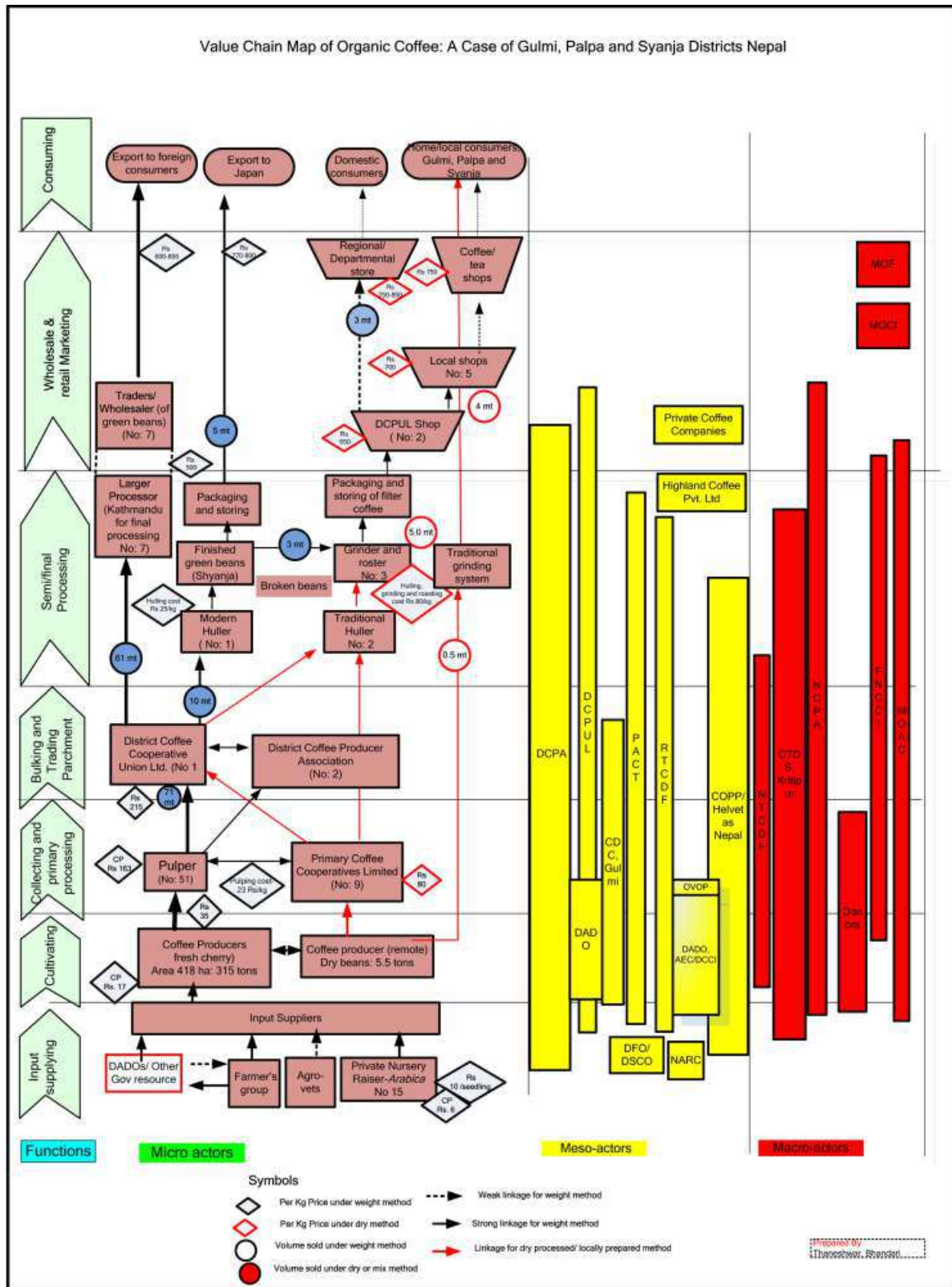


Figure 2: Value chain analysis of coffee subsector in Gulmi, Palpa and Shyanja district Nepal
Source: Field Survey (2015 and 2017)

Marketing channels of coffee: Four marketing channels were identified in the study area as illustrate in Figure 3. First was shortest with coffee producers catering to 0.15% demand, for home consumption and local market with relatively lower grade coffee which was processed by using locally available utensils. Second marketing channel represented private processing units collecting 21.30% of the fresh cherry produced by coffee producers and deliver final product to the

domestic market with 24.50% share. Third channel consumes 76.66% of the fresh cherry by cooperatives operated primary and secondary processing units which provides 27.55% of the consumption demand, in the domestic market. Fourth channel is the extension of third channel to the export market which has 47.80% consumption share from the coffee produced in the study area.

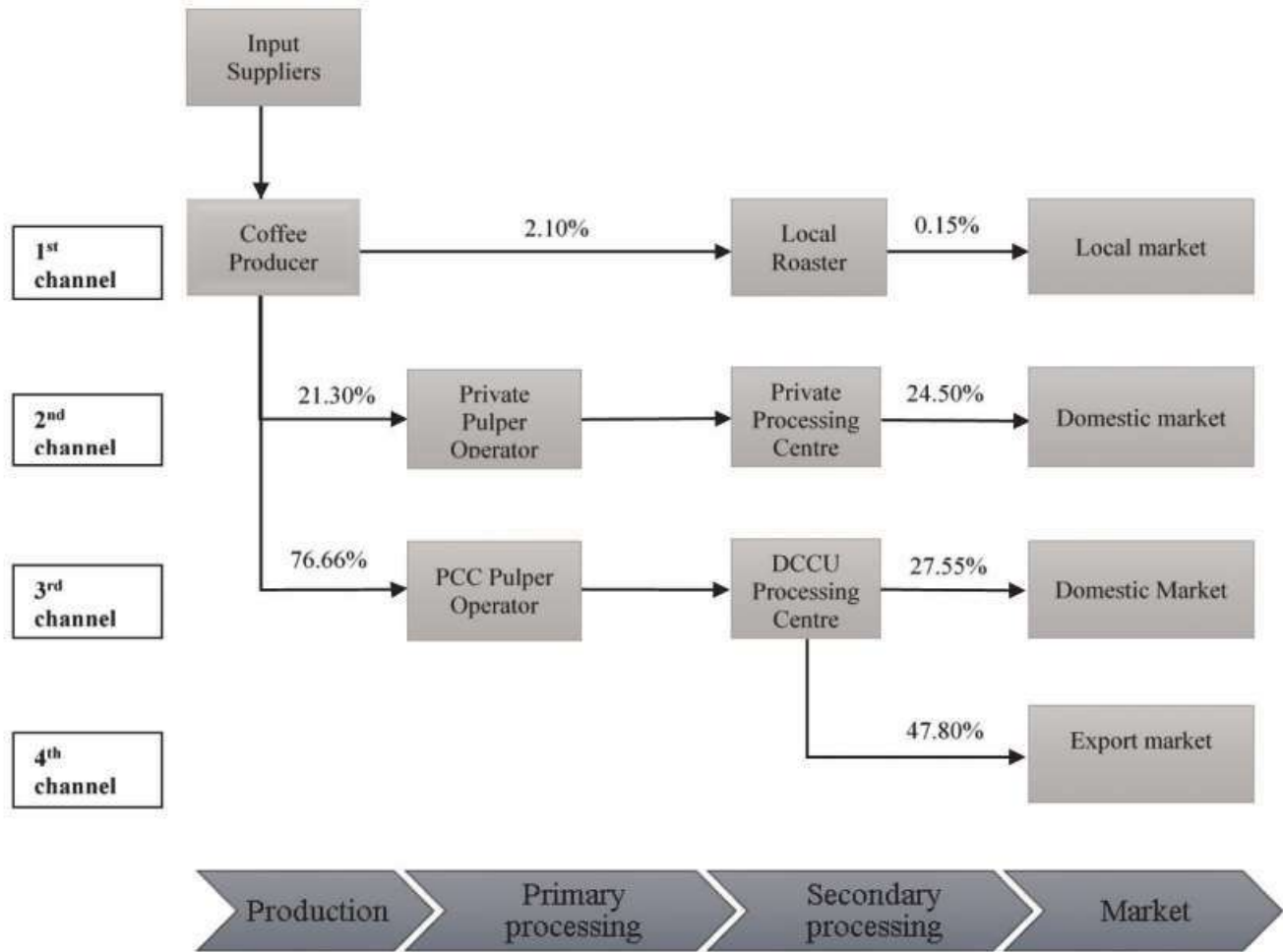


Figure 3: Marketing channels of coffee in Sindhupalchowk and Kavre Palanchowk
Source: Field survey (2016)

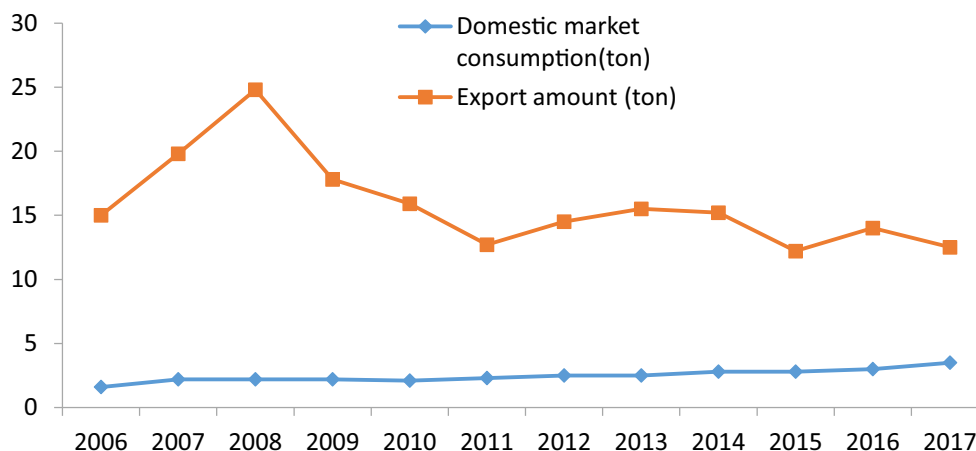


Figure 4: Domestic to export market situation of coffee in Gulmi district.
Source: DCF, (2017)

Fig. 3: Domestic market consumption and export amount in tons.

In three figures, marketing channel shows the share of local, domestic and international (export) market. However, share of export market outlet is nearly 48% in Sindhupalchowk and Kavre cluster while it was 75% in Gulmi, Palpa and Shyanja cluster. Figure 4 shows growing demand of local consumption over the year but gradually decreasing trend of export market. Mainly coffee consumers were students, officers, local and international tourists. Major shocking factor in the field study was less use of ground coffee instead of liking foreign instant coffee due to enhanced flavour and aroma (Rayamajhi and Bhandari 2017).

Cost of production: Cost of production (CoP) has been separated into fresh cherry production and dry parchment production

Cost of fresh cherry production: Share of each variable cost in total cost of fresh cherry production is illustrated in Figure 4. Because of asynchronised ripening nature of coffee, harvesting was quite troublesome and required repetitive plucking which contributed 49.18% of the total cost of production. It was followed by manuring cost (22.35%) and labour cost for other cultural practices (20.21%) like weeding, pruning etc.

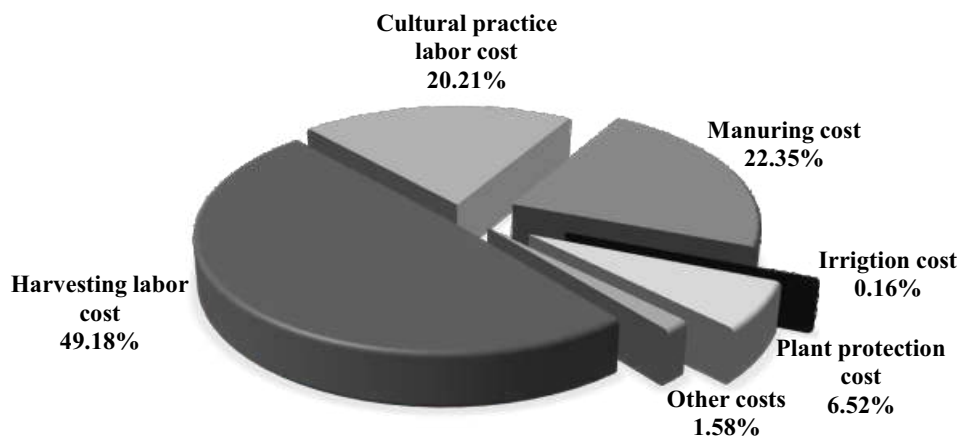


Figure 4: Contributions of different variable costs in cost of fresh cherry production
Source: Field survey (2016)

Table 1 shows that cost of fresh cherry production was Rs 169631.03 per ha. Technically, while 2000 plants could be planted in a ha of land, the average density of plantation in the study area was only 1388.45 plants per ha (sd=638.23). Hence, cost of production per individual coffee plant was also analysed. The cost of production per bush was estimated as Rs 151.55. Similarly, cost of producing 1 kg of fresh cherry was Rs 69.03. High cost of production coupled along with low productivity has reduced the competitive strength of Nepalese coffee (FNCCI/AEC 2006).

Table 1: Details of cost of fresh cherry production per ha

Particulars	Mean \pm se (n=120)	Standard Deviation
Labour cost for harvesting	83424.15 \pm 6392.72	70028.70
Labour cost for cultural practice	34288.81 \pm 2346.66	25706.38
Manuring cost	37909.50 \pm 3887.31	42583.31
Plant protection cost	11052.24 \pm 3205.67	35116.33
Irrigation cost	277.76 \pm 116.77	1279.11
Other costs	2678.57 \pm 401.55	4398.78
Cost of production per ha	169631.03 \pm 9101.68	99703.91
Cost of production per bush	151.55 \pm 11.15	122.15
Cost of production per kg of FC	69.03 \pm 2.78	30.41

Source: Field survey of Sindhupalchowk and Kavre Palanchowk district (2016)

Cost of dry parchment production: Table 1 shows the details of production cost of dry parchment. The total variable cost and total fixed cost of producing a kg of dry parchment at pulping centre was Rs 402.62 and Rs 8.84 respectively. Hence, studying 10 pulping centres of the study area, the total cost of dry parchment production was estimated as Rs 411.46 per kg.

Table 1: Details of cost of dry parchment production per kg

Particulars (Rs/kg)	Mean \pm se (n=10)	sd
Input cost of fresh cherry	331.32 \pm 16.21	51.26
Electricity cost	2.88 \pm 0.86	2.73
Washing cost	9.87 \pm 3.11	9.83
Packaging cost	1.44 \pm 0.28	0.88
Labour cost	55.98 \pm 10.26	32.46
Other cost	1.12 \pm 1.09	3.44
Total Variable Cost of production	402.62 \pm 14.84	46.94
Total Fixed Cost of production	8.84 \pm 1.73	5.46
Total Cost of Production per kg of DP	411.46 \pm 14.34	45.35

Source: Field survey (2016)

Cost of green bean production: Details of cost of green bean production is presented in Table 2. It showed that total variable and fixed costs incurred in producing a kg of green bean was Rs 191.45 and Rs 28.82 respectively. Hence the total cost of producing green bean was Rs 478.40 per kg.

Table 2: Details of cost of green bean production per kg

Particulars	Mean \pm SE (N=3)	SD
Input cost of dry parchment	139.75 \pm 113.31	196.27
Electricity cost	2.02 \pm 0.07	0.11
Fuel cost	0.91 \pm 0.05	0.09
Hulling labour cost	10.87 \pm 0.74	1.27
Hand sorting labour cost	35.04 \pm 11.87	20.56
Packaging cost	2.43 \pm 0.56	0.98
Certification cost	16.56 \pm 13.52	23.42
Other cost	0.42 \pm 0.09	0.16
Total Variable Cost of production	191.45 \pm 102.67	177.83
Total Fixed Cost of production	28.82 \pm 15.34	26.56
Total Cost of Production per kg of GB	478.40 \pm 23.41	40.55

Source: Field survey (2016)

Profitability analysis: Similarly, the net profit of coffee producers was found to be 20.18% compared to that of 4.10% and 24.13% respectively for pulp operators and secondary processors. High costs of production were reported because of high damage of white borer in a poor water regime area because of climate change. Respondents reported poor backward and forward linkage among the available stakeholders in coffee sub-sector. Benefit cost analysis of these major players showed that coffee enterprise was a profitable business with B/C ratio 1.20, 1.04 and 1.24, respectively at the levels of coffee producer, pulp operator and secondary processor.

Value addition: Furthermore, the study exposed that there's value addition of Rs 105.35/kg from fresh cherry to dry parchment, Rs 76.52/kg from dry parchment to green bean and Rs 641.06/kg from green bean to powder coffee.

Producers' share: Producers' share on consumer price was 34.71% in domestic market and 24.25% in export market channel. Share on domestic retail price of pulp operator and secondary processor was 43.07% and 49.14%, respectively. The figure was 30.08% for pulp

operator and 39.32% for secondary processor in export market channel.

Conclusions

Coffee is a promising and potential exportable commodity of Nepal which has speciality quality potential as good as Mexican coffee. Because of the growing coffee culture among the youths, especially in the cities, both production and demand of organic coffee is increasing every year, albeit its production isn't increasing in the same trend. Value chain analysis of the coffee sub-sector shows that secondary processors harnessed more benefit followed by fresh cherry producers in the chain. Nepalese coffee price is dependent on export market price of green parchment and fair trade price of NCPA. Despite premium price received by the farmers, farmers were not getting modest benefit because of high cost of production and low productivity. Other counter-productive problems are poor backward linkage and white borer problem in a changing climate change context of less water in the plantation regime.

Acknowledgements

Sincere thanks goes to the members who rendered direct and indirect help during the conduction of this research. Authors extend sincere gratitude to National Agricultural Research and Development Fund (NARDF) for funding the research.

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Mr. Thaneshwar Bhandari is working Assistant Professor of Agricultural Economics at Institute of Agriculture and Animal Science Lamjung Campus, Tribhuvan University Nepal since July 2012. He is permanent faculty of the university. He has three dozens of published articles related to value chain of major high value commodities like coffee, vegetables, cardamom, dairy, bamboo, honey, seed potato, Khayar (Acacia catechu), banana, medicinal and aromatic plants, cereal seeds, feed and broiler of Nepal. He has seventeen years continuous works with government agencies, donor organizations, INGOs and NGOs regarding academic, agricultural research, development work activities.

Mr. Hari Krishna Panta is Assistant Professor of Agricultural Economics, Tribhuvan University, Institute of Agriculture and Animal Science Lamjung Campus. He has involved in academic and research activities of agricultural marketing aspects since his joining in 2005. He is permanent faculty of the university. He has published a dozen of publications regarding rice research, value chain as well as fertilizer marketing situation in Nepal.

Mr. Gaurav Luitel is working as permanent staff (Technical Officer) at National Coffee and Development Board since 2015. He has completed and submitted his M.Sc. Ag Thesis in 2017 in value chain analysis of coffee sub-sector in central Nepal. His thesis was recorded outstanding worth in the overall valuations.



Digital Transformation and Technology: Two sides of the Same Coin

Mr. Shalil Gupta

AVP Insights and Consulting, IDC South Asia

Digital Transformation for enterprises and New Emerging Technologies such as Artificial Intelligence, Robotics, Internet of Things, Cloud, 3D Printing etc is not quite different and represents two sides of the same coin.

At a macro level, it is the most scaled transformation where technology innovation will disrupt each and every process, value chain and operating model of the organisations.

This is, in fact, the biggest revolution in the industry and not only digitally transformed organisations will outperform traditional organisations but traditional organisations will face existential crises.

Digital Transformation (DX) acceleration forces, enterprises to multiply their digital innovation pace and scale through mastery of digital platforms, external digital developer communities, data-as-a-service (DaaS) marketplaces, expanding artificial intelligence (AI) services, blockchain as a service, new human-digital (HD) interfaces, and open API ecosystems.

We have already started seeing some of the transformed value chain and operating model across the industry in terms of Amazon using AI to predict the next buying behavior, use of drones to deliver goods in remote areas.

Let us see how some of some of the core industries will transform. Usage-based insurance will account for at least 15 percent of global vehicle insurance market by 2019. By 2020, 40 percent of e-commerce is enabled by cognitive personal shoppers and social network.

Large retailers will deploy robots in customer facing

roles as assistants. 40 percent of field service calls in manufacturing will be managed by virtual technicians or chat bots. Blockchain one of most disruptive technology will be adopted globally in trade finance.

By 2026, 1/4th of paramedics and emergency rooms will use field-ready 3D printers to deliver real-time wound care.

All of the above, examples clearly manifest that value chain across industries will not only be changed but disrupted completely.

IDC predicts, By 2021, at Least 50% of Global GDP Will Be Digitized, with Growth in Every Industry Driven by Digitally Enhanced Offerings, Operations, and Relationships; by 2020, Investors Will Use Platform, Data Value, and Customer Engagement Metrics as Valuation Factors for All Enterprises.

Given the looming digitization of more than half of the global economy, digital transformation will continue to rise on CEOs' and line-of-business (LOB) executives' priority lists.

The urgency to digitally transform will drive an increasingly large portion of ICT budgets. By the end of 2019, digital transformation spending is expected to reach \$1.7 trillion worldwide, a 42% increase from 2017. (Source IDC: IDC FutureScape: Worldwide IT Industry 2018 Predictions)

Some of the key trends:

3D Printing: The key value proposition offered will be the ability to produce larger structures and more intricate parts and to lessen the reliance on human labor. Aerospace and automotive, already seeking to

transition the use of the technology from prototyping to final part production, will gain the ability to produce more composite part in the production.

The construction industry will start using five-axis printing offered by robotic/3D printer solutions and enable the ability to produce much larger-scale structures such as bridges, buildings, vehicles, and other large fixtures.

Connected Vehicles: The continued development of connected vehicle technology not only have economic impact but profound social impact.

The emergence of new connected capabilities provides consumers and enterprises feature-rich, safer, and efficient vehicles as well as opportunities for new services in public transportation, fleet management, and connected infrastructure.

As cars move to auto driven and 5G becomes a reality, automotive OEMs will see a revenue margin increase of 5 percentage points through delivery of customized, dynamic in-vehicle content related to driving behavior and vehicle performance.

Reduce cycle time for automotive systems design. Smart assistants include vehicle management and hands-free capabilities and create a more seamless vehicle experience.

Capabilities to optimize traffic flow and significantly reduce collisions. Improve delivery times of long-haul truck fleets by up to 30%.

Augmented and Virtual Reality: AR and VR are the most profound technology implications across the industries. In entertainment it has already proven its magic by mega successful movies like Bahubali 2 etc.

Organizations are finding ways to integrate virtual reality into internal workflows, training, and customer-facing experiences. Early success story has been around automobile showrooms, where consumers get the opportunity to explore a wide range of interior options and exterior options on a car they're considering for purchase.

VR gives the seller the opportunity to radically increase options for the buyer. Streamlining product creation as designers iterate and collaborate in real time creating

digital objects that will eventually become real-world products.

Training the engineers who maintain complex manufacturing lines, to aid in the treatment of patients, particularly in the areas of mental health and recovery.

Analytics and Information Transformation: Organisation would need New Intelligent Systems that will have an Embedded Decision-Centric Computing Architecture that Automatically Detects and Evaluates Conditions and Makes Decisions About How to Respond.

Enterprises that Rely cognitive and Machine Learning Based Decision Automation will not only auto mate decisions and their options but enterprises Will Be Generating Data-as-a-Service (Daas) Revenue from the Sale of Raw Data, Derived Metrics, Insights, and Recommendations.

Organizations are facing starkly contrasting futures for themselves, their IT organizations, and their businesses.

They have two choices: continue working as they have in the past or adopt new, sometimes radical ways of thinking and working.

The trends and advice in this article are daunting but take a measured approach starting with discussions with business peers, staff and management, and partners to begin the journey of shaping, then implementing, the digital future of the organization. Establish your starting point by evaluating your relative maturing.

Articulate the overall digital mission of your company. There is only one way to make Digital Transformation a success. Re-imagine and Re-Create. This is the only long and short cut of having successful digital enterprise and being part of digital continuum.

About the Author

Mr. Shalil Gupta, Associate Vice President for Insights and Consulting, IDC India, is responsible for deep-dive insights and advisory content on IDC's vertical and 3rd Platform pillars (cloud, mobility, Big Data and analytics, and social), with C-suite research and engagements across the six vertical industries – energy, finance, government, health, manufacturing, and retail – advising both IT buyers and IT suppliers/enablers across the ICT marketplace.

Global Value Chain in Satellite Manufacturing Sector



Dr. Annadurai M.
Distinguished Scientist, Director
ISRO Satellite Centre (ISAC), Bangalore

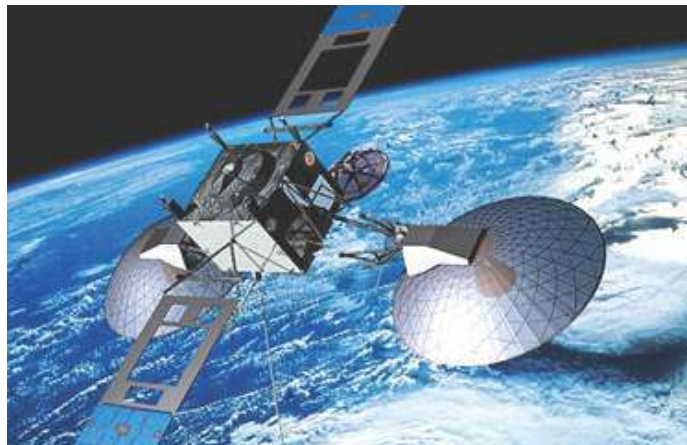
ISRO Satellite Centre is the lead centre for realizing satellites that provide satellite based services to the Nation. Over the years, the centre has rolled out 100 satellites capable of providing services in various application domains like communication, meteorological, remote sensing, navigation and space science explorations. These satellites are continuing to serve the key sectors of the Indian economy like communication, agriculture, water resources, urban planning, Land use, Fisheries, Oceanography, Weather forecasting, Disaster management, Search and Rescue and Navigation.

The Space science & Interplanetary missions like Chandrayaan-1, Mars Orbiter Mission and Astrosat have received World wide acclaim and has put India in the global map while at the same time inspiring the Gen next.

Satellite technology is complex and multidisciplinary

in nature demanding high quality & reliability requirements in order to enable them to work in hostile space environment. The entire process of satellite building is elaborate and time consuming which involves use of critical Hi-rel components, complex systems fabrication and testing, robust qualification, review processes & assembly of complete satellite by qualified & trained workforce.

In the upcoming years, the centre is poised to building 18-20 Satellites per annum to meet the increasing demands for space based services in the country. In order to meet these rising national demands for satellites, the Centre has evoked greater private sector participation in satellite building activities to enhance its throughput. Capacity building in the private sector is the need of the hour to enable private players to deliver satellites for “launch on demand” satellite. A large number of micro satellites are also expected in large numbers to be totally outsourced to external industry.



The organisation offers massive opportunities for the participation of private industries in satellite building with a ‘WIN-WIN’ strategy. The Industries can participate in the supply of a variety of requirements like space qualified critical components, satellite subsystem

fabrication, testing, systems Assembly, Integration & testing (AIT) activities etc.

Towards this, ISAC has taken a number of initiatives to enable industries in satellite manufacturing. some of which include:

1. Standardisation of spacecraft systems & satellite bus platforms
2. Channelization of different types of outsourcing models for fabrication & testing of standard subsystems
3. Implementation of Pilot project model for System level AIT activities involving extensive Class room training and on-the-job training.
4. Establishment of state-of-the-art facilities and infrastructure including subsystem level fabrication labs, work benches, environmental testing facilities, systems level large cleanrooms, fixtures & equipment, environmental & dynamic test facilities, CATF facilities etc.
5. Flexible Outsourcing policy frame work setup

At present, private Indian Industries are supporting in mechanical and avionics spacecraft subsystem fabrication and testing activities in large numbers through 5 different models. In the recent past, ISAC had opened up opportunities to private sector for carrying out Systems Assembly, Integration & Testing (AIT) of two standard ISRO satellites as a pilot project. Subsequently, technically qualified industry partner with consortium of industries was selected who is presently engaged in the Satellite AIT activity.

Despite these efforts, there is imperative need to scale up the industry participation in satellite building



activities. ISAC is in the process of selecting multiple, potential industry partners who can take up systems assembly, integration & testing activities of various categories of satellites to roll out ready-to-launch satellites.

In the long run, the organisation is looking for a viable Industry partners who can take up end-to-end satellite building activity right from components procurement to delivery of fully ready spacecraft for launch. ISAC is looking forward to forge a vibrant Industry partnership which can take up entire supply chain of satellite manufacturing to meet user requirements, ground segments and taking the satellite based applications to fulfil the Societal needs.

About the Author

Dr. M. Annadurai, leads a team of more than 2500 engineers and scientists engaged in design, development and production of satellites for the Indian space programme. After taking over the realm of ISRO Satellite Centre (ISAC) he accelerated the pace of satellite realisation by optimising satellite building turnaround time. Under his leadership, the industry participation reached greater heights in satellite building programme. He has the distinction of building 23 satellites (April 2015 till date) which comprises six communication, six earth observation, three navigation, two nano satellites, one space science mission including five student satellites. Most importantly, Indian Navigation Constellation (NavIC) is operationalised.

Born on 2nd July, 1958, Dr Annadurai graduated in Electronics and Communication Engineering, Post Graduate in Electronics and holds Phd., in Engineering. During his career he played a pivotal role to bring out ground automation for S/C operations. He also contributed to the first satellite dedicated to tele-education, Edusat, as its Associate Project Director. Dr. Annadurai has made significant contribution to India's first Lunar Mission, Chandrayaan-1 as it's Project Director. The project has won many appreciations and awards including the prestigious Space Pioneer Award, 2009 for it's innovative cost effective design, International Co-operation and the historical discovery of water on the Moon.

Dr Annadurai is the Chairman of Indian Remote Sensing Society (ISRS) Bangalore Chapter and has 75 papers to his credit and is the supervisory guide for four PhD works. He has delivered lectures in many national and international forums and also has written three books.

Enhancing Textile & Apparel MSMEs Participation in GVCs

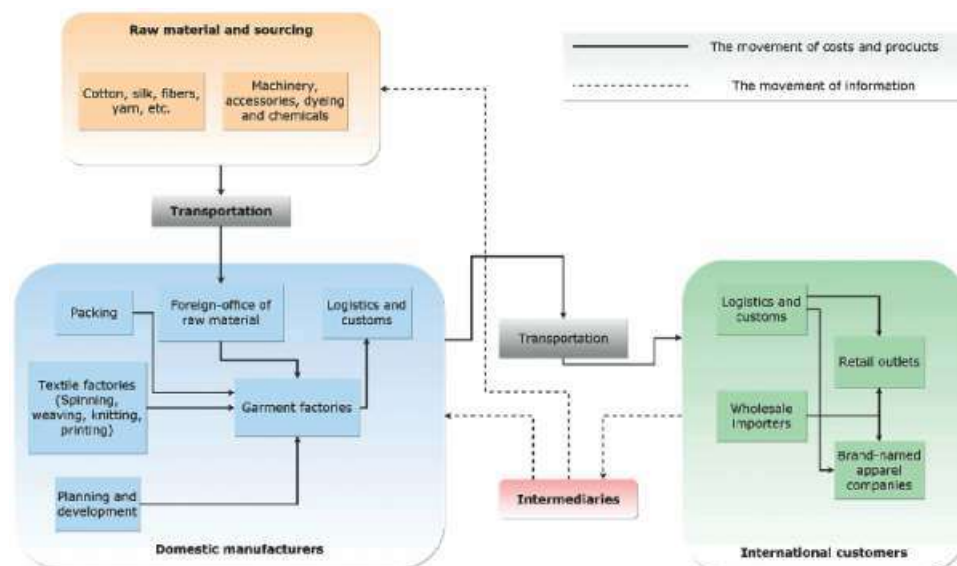
Dr. Siddhartha Rajagopal
Executive Director, TEXPROCIL



Introduction

Entry into Global Value Chains (GVCs) allows micro, small and medium-sized enterprises (MSMEs) to participate in the global economy. A number of international organizations such as the Organization for Economic Cooperation and Development (OECD), the International Labour Organization (ILO), the United Nations Conference on Trade and Development (UNCTAD) and the United Nations Industrial Development Organization (UNIDO) have highlighted

nations and countries. Globalisation has also motivated companies to restructure their operations internationally through outsourcing and offshoring of various processes. GVCs cover the full range of interrelated production functions performed by firms in different geographic locations to bring out a product or a service from conception to complete production and delivery to final consumers (UNCTAD, 2006).



GVCs, today, are redefining manufacturing and trading activities in areas like trade in value-added production sharing, inter - connected supply chains, vertical integration, etc. In varying combinations these constitute the GVC template. The core notion however is ‘internationally joined-up production and distribution.’+

Factors driving GVCs

GVCs, as understood today, are not limited to the comparative advantages applicable to countries and broad sectors. Instead, they combine the value added from different sources and impacting multiple dimensions like trade flows, productivity and labour markets. The fundamentals required for the development of GVCs include achieving cost efficiencies, deepening market access and achieving low international trade costs.

the MSME contributions to income, employment and exports and how governments can strengthen them further. Mapping GVCs shows that trade policies, especially in developing countries, need to be structured to benefit MSMEs by supporting them to enhance their role in the global economy.

The GVCs Concept

The past decades have witnessed a strong trend towards the international dispersion of value chain activities on account of a crossflow of capital across

GVCs in Textile & Apparel (T&A) sector

GVCs display different forms of coordinated structures with considerable variations not only between chains but also at different points in the same chain. A GVC thus can be “buyer driven” or “producer driven”, depending on who is driving the chain.

Producer-driven chains - as in capital and technology-intensive industries such as automobiles, aircrafts, computers, semiconductors, and heavy machinery - have large, usually transnational, manufacturers playing the central role in coordinating production networks (including their backward and forward linkages).

Buyer-driven commodity chains have large retailers, marketers, and branded manufacturers playing the pivotal role in setting up decentralized production networks in a variety of exporting countries (typically located in the developing countries).

The labour-intensive Textile & Apparel (T&A), handicrafts and footwear sectors are seen as examples of buyer driven chains. Under these chains, tiered networks of third world contractors that make finished goods for foreign buyers generally carry out production. The specifications are supplied by the large retailers or marketers that order the goods. Buyers or producers coordinate or control the GVC process.

Expansion of T&A MSMEs in the Third World

T&A sector has enormous potential owing to the significant contributions it makes towards the economic development and employment generation in many developing countries. Textiles provides the major input to the apparel industry, creating thereby an inseparable and complex value chain across the sector.

In this sector, the physical production of goods is usually separated from the design, marketing, and distribution arms. A typical T&A value chain can generally be divided into five main parts viz. raw

material supply (fibres), provision of components (yarns and fabrics), production networks (factories including domestic and overseas subcontractors), export channels (trade intermediaries), and marketing networks (retailers).

On one side, T&A industry has high-value added segments like high-end fashion, sportswear and industrial textiles where design, research and development (R&D) are important competitive factors and human capital is intensively used in design and marketing. However, on the other side, this industry can adopt modern technology at relatively low investment costs. These characteristics have made the apparel part of the industry, ‘foot-loose’ enabling it to adjust to changing market conditions quickly.



The relative ease of setting up apparel production plants propels countries into bouts of protectionism from time to time thereby leading to an unparalleled expansion of T&A MSMEs in the third world.

Enhancing T&A MSMEs Participation in GVCs

The success of MSMEs in T&A supply chain depends on their ability to design products with contemporary aesthetic content, monitor demands for these, and manage a flexible and responsive supply chain that allows them to adapt quickly to any changes in demand.

The T&A products require identifying market needs and translating consumer value into the supply chain.



The very short product life cycle requires an agile supply chain that is able to deliver the product in a timely manner.

To be successful, the T&A MSMEs require mapping the value derived by their customers as indicated by the key performance indicators such as cost efficient distribution, quality and consistency, value for money, on-time delivery, and strategic reserve, amongst others.

Helping T&A MSMEs to fit into GVCs

By virtue of the new trend of bundling of production and services, participation in GVCs has become easier and can help T&A MSMEs specialize in specific tasks instead of an entire product range. Their abilities to develop new technology, extract value, fend off competition and manage costs depends on the structure and mode of interaction with the T&A supply chain.

MSMEs can map and analyse the flows of goods and services within the T&A supply chain and identify their best fit by focusing on their own strengths such as firm size, ability to value add, or geographical location. They also need to have a thorough understanding of the hierarchy of tier levels and integrate as a supplier at Tier I, II, III, or IV... level with a determination of the Tier level where they can fit, instead of investing resources to become the final consumer (who places orders).

The performance of T&A MSMEs participating in a GVC can further be improved by creating a change in the nature and mix of activities carried out in each link in the T&A chain and nurturing relationships with partner suppliers. These changes can further include upgrading through one of the many mediums viz. process (e.g. increased inventory turnover, lower wastage, on-time

deliveries), product (e.g. by producing components or retailing new or more competitive products developed by lead firms), functional (e.g. taking responsibility for outsourcing accounting, logistics and quality functions) or by chain upgrading (e.g. moving to an entirely new value chain).

GVC participation opportunities and challenges to T&A MSMEs

The acceleration of globalization, aided by the rapid development in information and communication technologies, improved transport facilities and tariff reductions, presents many opportunities and challenges for T&A MSMEs. Participation in GVCs can give them the opportunity to attain financial stability, increased productivity and expand their market presence. Cooperation within a network of upstream and downstream partners can enhance their status, information flows and learning possibilities along with introduction of new business practices and more advanced technology.

On the other hand, the T&A MSMEs' involvement in GVCs places greater demands on managerial and financial resources, the ability to meet international standards and the protection of in-house intellectual property. Other potential challenges include the high pressure for on time production at low cost, adhering to compliances and standards, and constantly upgrading and innovating.

To meet these challenges, the T&A MSMEs need the support of their governments.

Government Support

World over, MSMEs have become an important constituent of the national economies, contributing significantly to employment expansion and poverty alleviation. They need to be fostered and developed in a supportive environment before they become attractive for venture capital.

This calls for providing an environment conducive to support growth of innovation, addressing the capital needs of MSMEs and promoting the development of incubation clusters to support and assist them to become technology based entrepreneurs from being individual innovators. They also need to promote networking and forging of linkages with other constitu

ents of the GVCs for commercialization of their developments.

Recognizing their importance in terms of contribution to the country's industrial production, exports, employment and creation of entrepreneurial base, the Government of India has been supporting the promotion and development of MSMEs.

The recently presented Union Budget has reduced the corporate tax to 25% for small companies with annual turnover of up to Rs 250 crore. An allocation of Rs 3,794 crore for credit support, capital and interest subsidy, and innovations in the sector has also been made.

Going further, the Union Cabinet has also recently approved the change in criteria for classifying MSMEs from 'Investment in Plant & Machinery' to annual turnover. As per the new classification, enterprises having an annual turnover less than or equal to Rs 5 crore will fall under the 'micro' category. Units having turnover between Rs 5 crore to Rs 75 crore will be classified as small enterprises, whereas those having turnover between Rs 75 crore and Rs 250 crore will be classified as enterprises. All these policy initiatives will encourage ease of doing business for the SME's and make the norms of classification growth-oriented.

Some key facts and findings

As can be seen, GVC participation helps MSMEs to access inexpensive or more sophisticated inputs, in turn causing their products to be more competitive in world markets. Experience shows that MSMEs which adapted to the GVC trend, instead of pursuing domestically-based industrialization have gained better outcomes in their respective activities and sectors.

GVCs also provide an opportunity for MSMEs to integrate into the global economy at lower costs by producing only certain components and performing specialised tasks rather than finding value only in final products.

It is also been well established that a favourable business environment along with low tariffs facilitates participation in GVCs. Integration into GVCs leading to a productivity-enhancing movement of labour from agriculture to manufacturing and services has also been widely reported.



GVC integration also helps MSME's develop the capacity to produce at world class quality and efficiency levels. Going further, technology and knowledge transfers - often facilitated through FDI - can also enable them to reach higher thresholds.

While there are many advantages of participating in GVCs, MSME's should guard against at the many risks relating to global business cycles and to supply disruptions. Competitive advantage can become more fleeting as income inequalities and labour costs thereby exposing firms to vulnerabilities of location.

Finally, countries that have a more favourable domestic business environment and enabling trade policy have been found to be more integrated into GVCs. In order to benefit from international trading environment MSMEs in the Textile & Apparel sector require to adjust their production structure to the changing reality, develop the capacity to reallocate inputs between industries while sustaining the operations of a multinational firm.

About the Author

Dr. Siddhartha Rajagopal is currently working as the Executive Director of The Cotton Textiles Export Promotion Council (TEXPROCIL). Having majored in Political Science with specialization in international economic relations, Dr. Rajagopal has vast experience of over 3 decades in matters relating to International trade in textiles and clothing. During the course of his career in the textile and clothing sector, Dr. Rajagopal has been a member of several delegations/negotiating groups and has been actively associated with bilateral negotiations and consultations with USA, European Union and at the WTO. He has also been actively defending the interests of Indian textile industry against trade defence measures like Anti-Dumping and Anti Subsidy actions initiated at the WTO. Dr. Rajagopal has also been instrumental in conceiving export promotion schemes and market development strategies for the garment and textile sector and has organized India's participation in several international trade fairs and visits of trade delegations. He has had the opportunity to travel extensively the world over promoting the exports of Indian textiles and clothing. He can be reached at sid1107@gmail.com



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