CIO – Innovation management best practices
India's manufacturing sector - best practices not yet in place

'Sabka saath, abka vikas'[1]

Overview

November 2018

CIO published its first review of innovation in India in June of 2014, shortly after Mr. Modi's election. One of Mr. Modi's admitted challenges was to improve India's manufacturing sector.

The latest ranking[2] shows marked improvement with India now ranking 58th out of 140 countries overall in competitiveness and 31st in innovative capability; a significant improvement.

According to our on-line survey, however, registrants from India indicate that all is not well with the management of innovation in India's manufacturing sector, especially at the SME level.

By analyzing these responses, CIO has concluded that many Indian companies have polices and management practices in place which are counterproductive to innovation. This must change dramatically for the country to become innovative in the manufacturing sector.

Many studies have been done and much published on the macro-economic policies which India should adopt to become more competitive and innovative. Much less has been published on what should be done at the micro, or SME level, to make enterprises more innovative and productive. CIO has some insights by way of those from India who have participated in CIO's on-line survey!

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Appendices

[1] 'to take everybody together and move toward s inclusive growth'
[2] World Economic Forum Competitiveness Report, 2018.

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Is India's innovation rising?

Improvement evident at the macro level.

India had, as of our previous report a population of 1.2 billion[3], a GDP per capita of $1,492 and represented a 5.63% share of world total GDP. Its population is currently1.243 billion and GDP per capita is $1504.54 according to the latest WEC report. Up, yes, but a long way to go and economic progress remains a challenge.

The Global Competitiveness Report of 2010-2011[4] , the focus of CIO's first report, provided an indication of the state of innovation in India at that time. While India was seen to have the potential to innovate world-class products especially in the provision of low-cost satellite-based services and low-tech products, the country's innovation had lagged[5]. Part of the solution was seen to lie in the investment by western companies and the innovative culture which they could bring to business in India.

The WEF report in 2013-2014 reported a further deterioration in performance for most indicators of innovation; i.e. in WEF's 12th Pillar.

Overall currently, in terms of international competitiveness, India's ranking is 58th out of 140 countries against 63rd in 2017. India's innovation ecosystem is ranked at 35th. India's 'capacity for innovation was ranked at 48th in 2015 and is currently ranked at 31st.up from 39th in 2017.

China, often compared to India as a location for manufacturing excellence, however, has also gained in ranking and currently ranked at 24th in its innovation capability and 28th overall. India[7], scores below China in its quality of research institutions and, importantly, R&D spending.

	India in 2018	India in 2017[6]	China in 2018
Overall competitiveness ranking in WEF reports	58th	63rd	28th
Pillar #12			
Innovation capability	31st	39th	24th
R&D spending	53rd	28th	18th
Availability of scientists and engineers		36th	
University-industry collaboration	24th		28th
Quality of research institutions	8th	38th	2nd
Pillar #11			
Willingness to delegate.	38th	56th	50th
Innovation ecosystem	35th		

[3] World Competitiveness Report, 2013-2014, for 2012
[4] World Economic Forum
[5] The New York Times, February 22, 2010, In India, Anxiety Over the Slow Pace of Innovation.
[6] WEF report on global competitiveness 2016-2017
[7] Based on Global Competitiveness Reports

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India is identified as a 'Stage One' country in earlier WEC reports. China, by comparison is now at 'Stage Two'. For both India and China, the willingness to delegate at the micro level is well below other countries. This practice has been identified by both CIO and the WEF as a key indicator of the ability to innovate.

India's population will exceed that of China's by 2070[8] by which time China's population will have been on the decline since around 2020, most of this due to the higher fertility rate in India.

Modi's challenge is to have the economy engage in productive enterprises in order to provide employment in the private sector. sector[9] but productivity growth for India is well behind that for China and therein lies the challenge. Innovation leads to productivity growth but only if it can be realized at the micro level.

India's economic future may well lie in leap frogging past the China growth model. After all, India is a democracy and China is not. India's 'electorate is increasingly urban, educated, connected and hungry for jobs' (the Economist – May 23, 2015) and democracy in India is well known. India is different.

In terms of political vision, the 'India Shining' of the 1990s has been replaced by the 'Make in India'. In March of 2015 Ms. Lagarde of the I.M.F. referred to India as a "bright spot" on a cloudy global horizon. Progress is evident at the macro level.

Policies and innovation management practices in India's manufacturing sector need improvement!

How does CIO know?

CIO's most recent review of India's management practices in the manufacturing sector, based on results from the on-line survey[10], suggests that there is significant room for improving those manufacturing practices which impact innovation. Results from our on-line survey provide insight and a perspective on which management practices are most important.

First a note on the process of registering for the on-line survey.

Respondents to the on-line survey[11] are asked to enter their 'Ideal' for each of 25 Factors. The 'Ideal' is, in the registrant's opinion, the best policy or management practice which they could envisage[12] for each

[8] The Economist, August 15th, 2015; Population forecasts.
[9] Global Economics; India versus China: The Battle for Global Manufacturing – Bruce Einhorn, November 6, 2014
[10] Available at http://www.corporateinnovationonline.com
[11] See on-line survey available at http;//www.corporateinnovtiononline.com
[12] The Factors are based on researching the policies and management practices of highly-innovative companies admittedly the research base is based on data from the U.S.A., Canada, Europe and Japan.

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Factor. After registering their opinion, by Factor, on the 'Ideal' situation, respondents then provide their opinion on their current situation; i.e. their 'Reality' which provides each respondent's view of their current situation. 'Delta', the difference between respondent's 'Ideal' and their Reality'; is a measure of the respondent's satisfaction/dissatisfaction with their actual situation.

Appendix A sets out the average differences between India's 'Ideal' and the 'Delta' between the 'Ideal' of respondents and their 'Reality'. For example, for Factor #1, respondents' 'Ideal' is rated at '1' but their 'Reality' is rated '3'; representing two degrees of dissatisfaction'. Factor #6, dealing with the 'management of people and their interactions' shows the highest level of dissatisfaction as related to innovation. The 'Ideal' is '3' but the 'Delta', when measured against respondent's 'Ideal' is six.

Respondents' (from India) concerns and a comparison with the 'Best of Breed'

The bar is set too low in India!

Respondents to the survey, in the main, stated that they are senior executives of their company which were a mix of large and SME-sized companies. The 'Delta' highlights reality in India's manufacturing sector. The 'Delta' – i.e. the difference between the respondents 'Ideal' and their 'Reality, is particularly high for the following Factors.

'An innovative climate is not just a sentimental need. It has powerful business implications and can bring real results. There's a reason why companies like Google and Apple have such a breathtaking record of rapid innovation; you need to look no further than their climate. A climate of innovation ensures that you'll have the inherent ability to not just innovate with an occasional flash of brilliance, but to do so continuously. That's an extremely important strategic advantage to have in a fast-moving marketplace that's overcrowded with competitors.

- Factor #1; re the emphasis on short term or long-term profits. Respondents are of the opinion that the emphasis is on achieving a profit over the short term, much too much emphasis on short term profits. Management lacks a balanced focus on both short and long-term profits.

- Factor #3; re tolerance of mavericks. There appears to be little or no tolerance for mavericks; i.e. management does not make room for or promote those who speak out of line or those who exhibit off-the-wall thinking.

- Factor # 5; re tolerance for failure. Failure is not treated lightly and therefore people are dissuaded from taking chances. Failure is not seen, as it is with highly-innovative companies, to be learning experience.

- Factor # 6, re the emphasis on people management and their interactions. Human resource management is not a priority.

- Factor #10; re the degree of formal communication in the organization. There is insufficient information provided within their organization.

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- Factor # 16; re the attitudes to mergers, acquisitions and divestitures. There is a concern regarding major restructurings. Often this attitude results from a fear of what might result from a major restructuring.

- Factor #19; re the availability of budgets and resources should good ideas presented. Respondents do not believe that this is the case.

- Factor #21; re the concern is that innovators are leaving their organization. Innovators are leaving.

Another interpretation could be that the Factors – policies and management practices - influencing innovation - are not well understood in the manufacturing sector in India. They need to be!

We also examined how the 'Ideal' as stated by respondents compared with our standard of excellence, the Best of Breed (BofB). Respondents' 'Ideal' falls short of the BofB in 11 of the 22 Factors. The results are set out in Appendix C.

In particular, the following 10 Factors were considerably out of line when compared with CIO's 'BofB'.

- Factor #1: measures the emphasis on short term profits versus long-term profits.

- Factor #2: does management explicitly look for innovation.

- Factor #3: is there a tolerance for mavericks; i.e. does management make room for or promote those who speak out of line or those who exhibit off-the-wall thinking.

- Factor #4; the degree to which planning emphasis cost reduction versus looking for opportunities.

- Factor #5: the tolerance for failure; i.e. is failure as a learning experience or can it be career shortening.

- Factor #6: is there an emphasis, by management, on people and their interactions.

- Factor #7: is there special recognition and reward for innovators?

- Factor #10; degree of formal/informal communication in the organization.

- Factor #11: is it a practice to use independent work groups, project teams, or work groups to accomplish tasks?

- Factor #13: is there a very formal decision-making process?

The situation in India is even worse than outlined in the earlier comments, for these 10 Factors.

While the standard of comparison used, i.e. the 'BofB', may be too high and certainly the size of our sample partially limits the interpretation, the message is that the culture for innovation needs to be improved at the micro level.

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Many of these Factors fall under what CIO describes elsewhere as the 'organization and management of day-to-day affairs'. These are not complicated issues to address but do require a different management style. It is perhaps this style that is currently contributing to the lack of innovation in India's manufacturing sector!

SMEs need more attention, but where to focus?

Ideas for the future

There seems to be a growing awareness that SMEs need to upgrade their policies and management practices and are the best hope for improving innovativeness in the manufacturing sector. In other geographies this is not new; Germany with its Mittelstand[13] companies, Japan with its 'chuken kigvo'[14] (strong medium-sized firms), and in Canada and the U.S.A., SMEs are very much the major source of innovativeness. SMEs provide an underpinning for OEMs. Often it is the smaller, typically privately-owned businesses that come up with new ideas, take a risk and find commercial success.

According to Ross Bradsen[15], German Mittelstand have the following characteristics – perhaps exactly what India needs at this point. Often these companies are largely invisible to consumers because they supply high profile companies with products/technologies essential to the operation of their products. Often, a small priced product, with a huge impact on the performance of the product should it fail. The global technology industry depends on these products and these companies.

- Owner-operated (many privately or family owned) with emphasis on long term profitability (in contrast to the public corporations which face quarterly pressure to meet short term expectations).
- Focus on the final customer/end user as much as, if not more than, the immediate customer.
- Achieve unprecedented efficiencies by designing a business model with a razor-thin focus and learning to do few things well.
- To compensate for their razor-thin focus... they diversify internationally and enjoy great economies of scale. Export-oriented, they focus on innovative and high value manufactured products and occupy

[13] Germany's Mittelstand companies (SME) are a very important part of the country's economy. In 2003, these companies employed 70.2% of all employees in private business, according to the Institute für Mittelstandsforschung. Some predicted their demise that year due to narrowing of credit availability and a record number of firms collapsing So far these predictions have failed to materialize, Mittelstand companies continue to employ 70% of Germany's workforce.

[14] The technology prowess is a reminder of the country's industrial strength – even after two decades of economic stagnation – and the loss of its place to China as the world's second largest economy. The existence of these chuken kigvo firms is at the core of Japan's economic structure and act to support the larger well-known electronic firms as well as meet foreign needs. These components are known for their high quality and reliability. Small parts, yes, but parts that are essential for the operation of a larger system and require continual innovation to avoid becoming a commodity.

[15] Ross Bradsen, Regional Director Southwestern Ontario, Sector Lead: Advanced Manufacturing, Ontario Centers of Excellence.

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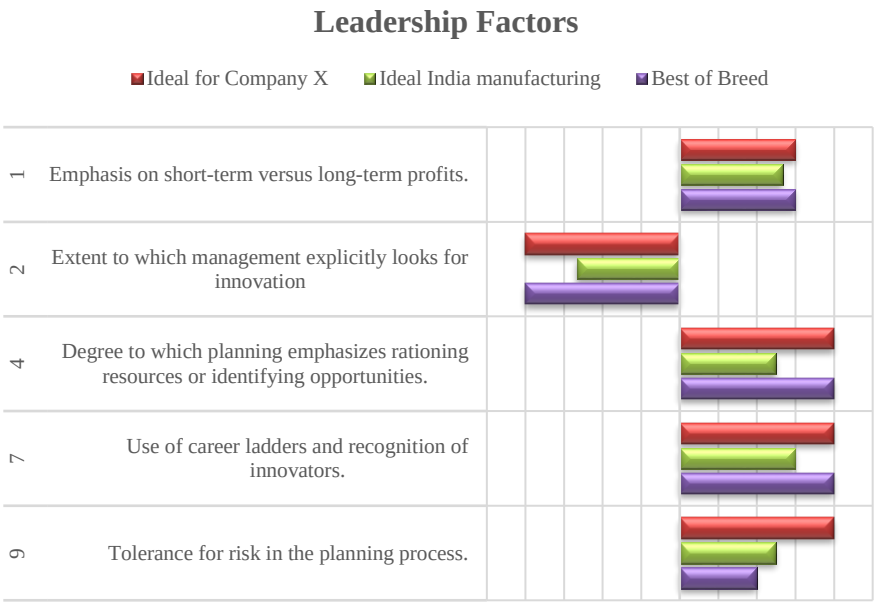
worldwide niche market leadership positions in numerous segments.

- They become leaders by being "the best" and charging premium prices over competition.
- They maintain leadership by "staying the best" and "maintaining premium prices". They do what's in the best long-term interests of the end user.
- They are not afraid to change. They innovate to stay "the best".

Dr. Vaish[16] makes the point – see Appendix D - that SMEs 'account for over 90% of industrial units in India and 40% of value added in the manufacturing sector and that this sector needs to be recognized for its contribution. This same point it emphasized by executives participating in discussions – primarily leaders of large, multinational Indian firms – in the report from the World Economic Forum[17].

An example drawn from our data base serves as a further indication of the need and direction which change might take at the micro level albeit each company is different and requires a customized approach.



'Leadership', in the on-line survey, is comprised of 5 Factors. Each of these Factors can be traced to the actions and practices of senior management and/or the actions of the Board of Directors.

In our example for Company 'X', the 'Ideals'[18] are closely in line with the 'Best of Breed' except for Factor # 9, tolerance for risk in the planning process. In this case the respondents view, in CIO's opinion, would be too idealistic and expectations should be lowered but for other Factors, the registrants opinion is very much in line with the BofB and the average for India.

Further analysis of the 'Delta' for Company 'X' provides insight into the areas where management practices fall short of expectations and are therefore most likely to be top-of-the list for corrective action in 'X'. Factor 9's 'Delta' should be revised downward for reasons noted in the preceding paragraph. The

[16] Dr Manoj Vaish, President & CEO – India, Dun & Bradstreet
[17] Appendix A
[18] Complete listing of 'Ideals' are provided in Appendix A

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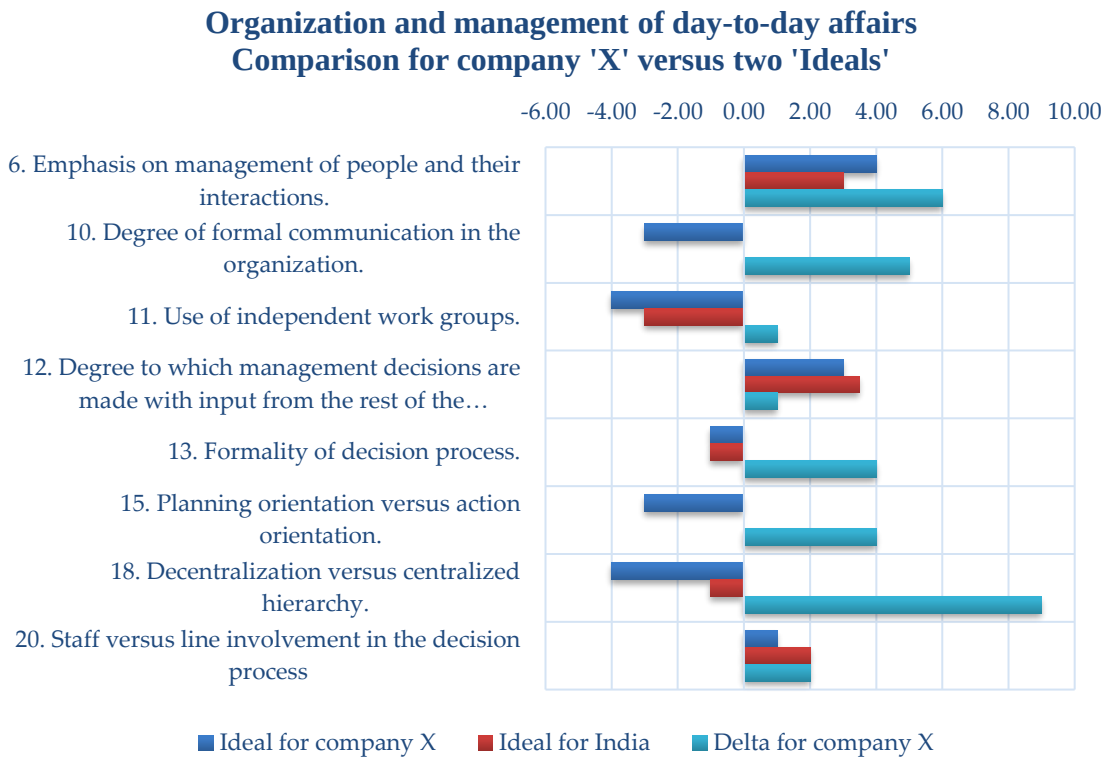
message from our example – 'X' – is clear; stop over emphasizing cost reduction (#4) and provide some incentives for innovators (#7). Factor #2, the call for the company to be innovative is a decision by senior management and in this case may not be the strategic choice taken by the senior group. This is often the case.

F#	Leadership Factors Issue addressed	'Delta'
1	Emphasis on short-term versus long-term profits	1
2	Extent to which management explicitly looks for innovation	5
4	Degree to which planning emphasizes rationing resources or identifying opportunities	5
7	Use of career ladders and recognition of innovators	6
9	Tolerance for uncertainty in the planning process	7
Total 'Delta' for Leadership		**24**

CIO has found that a high tolerance for risk is a characteristic of highly-innovative companies.

For a further comparison, on-line survey results are grouped for company 'X' under the theme, *organization and management of day-to-day affairs* and comprises eight Factors.



For Factor #6; the 'Ideal' for both company 'X' registrant and overall Ideal for India are closely aligned but the 'Delta' at '6' is very high indicating a high degree of dissatisfaction for this Factor.

The level of dissatisfaction is highest for Factor #18, the level of decentralization or delegation within the company.

For Factors number 11, 12, 13, and 20, the 'Ideals' are closely aligned but the dissatisfaction varies by Factor and could be addressed on a priority basis.

Based on this analysis, it is obvious that the first steps in the improvement process need to address those Factors which have the highest level of dissatisfaction.

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What to do?

Based on research of Indian manufacturing companies, several characteristics stand out as potential problems in the development of an innovative culture in Indian-headquartered companies.

1. Management may not be sufficiently explicit in calling for innovation. This is a strategic decision taken by the Board and CEO.

2. There is limited tolerance of mavericks – or personnel with 'off-the-wall' ideas.

3. Insufficient attention paid to matters such as intra-firm communication and recognizing the importance of a bottom-up process.

4. Planning's focus may be more directed to rationing resources and cost reduction than on identifying opportunities.

5. There is little evidence of the use of independent work groups to accomplish multi-disciplinary tasks. Their use is, however, a characteristic of innovative companies.

6. Special rewards and recognition for innovation or innovators may not be well developed.

7. Personnel may be discouraged from putting forth ideas since their view is that there is little prospect for receiving funding and management support.

Further research could be useful in identifying the significance and these and other potential road blocks to innovativeness. There is a need to infuse an innovative culture in the Indian-based manufacturing sector.

Modi has stated that "a one-size-fits all approach does not work for India[19]". India must invent its own solution to the issue of innovation and adopt whatever management practices make sense for the country and for individual enterprises.

[19] Modi – The Economist – May 23, 2015

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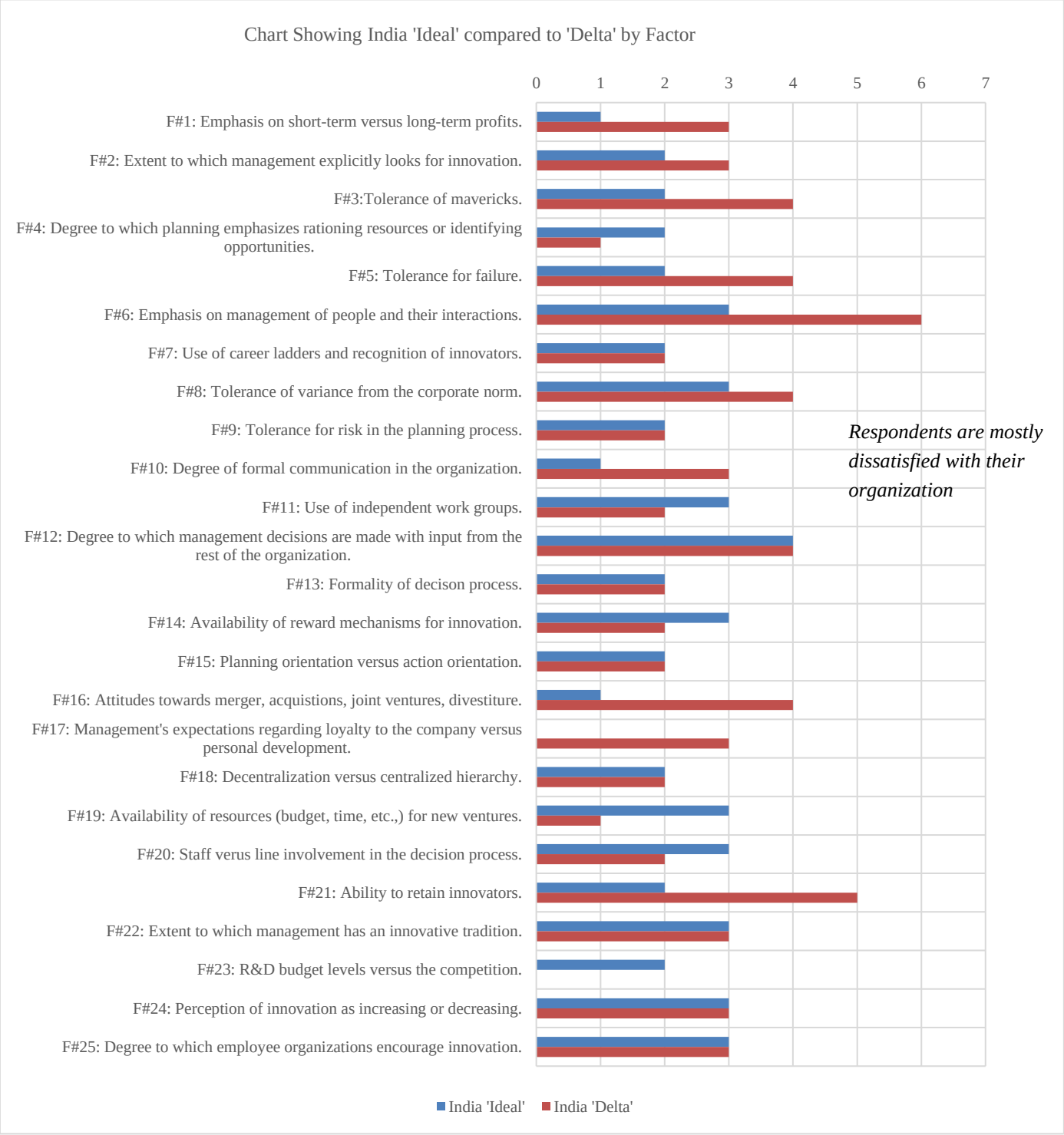
Appendix A
'Ideal' compared to 'Delta' by Factor



Respondents are mostly dissatisfied with their organization

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Appendix B
World Economic Forum[20] Comments on Macro Issues

CEO Policy Recommendations for Emerging Economy Nations
India

Highlighting is by CIO

A Rising Star

Over the last quarter century, India has moved away from its traditional socialist system and accelerated efforts to liberalize economic reforms. As a result, India today is recognized as one of the most competitive nations in the world, providing a strong talent pool in the areas of science, technology and research, as well as some of the lowest labour costs in the world. However, key challenges loom if India is to build on its achievements over the past 25 years. Namely, the country's healthcare systems, under-developed physical infrastructure, and policy and regulatory environment still create significant concern.

To improve its policy and regulatory environment and spur economic growth, India in 1950 established the Planning Commission, which is charged with formulating a strategy for the most effective use of the country's resources to improve the standard of living for Indian citizens. In support of its objectives, the Planning Commission has since its establishment implemented 11 Five-Year Plans, and implemented its 12th plan in March 2012 to target faster, sustainable and more inclusive growth.[7]

A Focus on Manufacturing

In 2011, India announced its National Manufacturing Policy and its objective of increasing manufacturing sector growth to 2-4% more than GDP growth, increasing manufacturing's share of GDP to 25% by 2025 and creating 100 million new jobs.[8] Manufacturing currently contributes approximately 14.2% to India's total GDP, which is lower than other emerging economies recognized for delivering significant competitive advantages for manufacturers, including China (32.4%).[9]

In a highly collaborative, multi-stakeholder process, more than 26 working groups were involved in developing the current manufacturing policy, including ministry verticals and cross-sector groups. As part of the efforts of this report, the team conducted interviews with chief executives of Indian manufacturing companies and held a workshop during the World Economic Forum on India to understand what executives believe are the most critical aspects of the current Manufacturing Policy and the challenges of achieving the goals outlined in both the 12th Five-Year Plan and India's National Manufacturing Policy, and to understand their recommendations on overcoming those challenges.

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[20] World Economic Forum Report on International Competitiveness 2013-2014
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Recommendations

Executives interviewed for this report consistently recognized the high level of stakeholder collaboration and effort that went into developing India's National Manufacturing Policy, yet believed implementation was analogous to a composer and maestro. Executives said the Planning Commission had and continues to play the role of the composer, but that the role of the maestro – who or what organization may be responsible for leading implementation (or the orchestra) – was still in question. Executives noted that the large number of stakeholders in India and the federal structure would result in wide variations in both the effectiveness and pace of implementation across India's states, yet urged strong leadership at the state level since much of the regulatory burden and business hurdles are created there.

The Indian Backbone Implementation Network (IBIN) is the Planning Commission's answer to the implementation challenge. A relatively newly announced initiative, the IBIN is a set of tools designed to manage dialogue, resolve conflicts, coordinate among stakeholders and manage implementation.

In addition to the broad policy implementation recommendations outlined by executives, those participating in the discussions also offered the following specific recommendations for improving India's competitive advantage.

Design effective ways to scale quality training for the workforce of the future

Executives consistently said skill development is the most pressing challenge to the manufacturing sector in India. Although the Indian government has put in significant effort over the past 50 years to develop its science and technical infrastructure, executives said the current capacity for workforce development does not meet the country's aggressive growth targets. Unlike Japan and Western European countries, India has a large young workforce, which all participants noted is a key strength to be leveraged. Executives almost unanimously supported the National Manufacturing Plan's approach to skills development; they stressed that the following actions would do much to scale workforce training initiatives.

Build skills among the large population of minimally educated workforce: Executives stressed the need to develop creative ways to address the workforce challenge, including leveraging digital technology.

Establish industry training institutes in the form of public-private sector partnerships to provide relevant vocational and skill training: Executives emphasized the need for both the private and public sectors to take responsibility, particularly for vocational and operator-level training. India's National Skills Development Corporation was cited as a good example.

Create additional polytechnic institutes focused on delivering higher education in vocational or technical subjects.

Develop targeted training and development for the general management and technical supervisory level: Executives consistently said that businesses need workers with strong critical thinking, leadership skills, and highly technical manufacturing skills. The challenge, however, is to comprehend manufacturing at a factory and product design level, management level, and value chain level.

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Develop less restrictive labour laws

Executives participating in the discussions said that labour laws in India are "fairly rigid and cumbersome", making it difficult for companies to hire and lay off workers according to seasonality and volatility in demand. The rigidity of legacy labour laws results in companies hiring fewer people than they need and requiring the people they do hire to work overtime.

To improve in this area, executives said policy changes need to be enacted that focus on improving workforce relations and allowing greater flexibility for companies to react to changes in demand. Furthermore, executives agreed strongly that the labour costs in India must remain competitive. Some executives pointed to the Mahatma Gandhi National Rural Employment Guarantee Act, which gives adults living in rural areas a guaranteed period of work each year at a minimum wage on a public project, as a significant disadvantage to the manufacturing sector in terms of keeping the cost of labour low, as manufacturers compete with the agriculture sector to attract talent.

Invest in globally competitive infrastructure

While India has achieved a lot in terms of infrastructure, many executives noted concerns with the quality of India's infrastructure, and more concerning, believed the country still has a long way to go for achieving an infrastructure environment that enables competitiveness.

Infrastructure challenges that present hurdles for industry in India are primarily focused on supply-side constraints. For example, power supply is a challenge, as is the high cost of capital and controversies that often accompany land acquisition.

The World Economic Forum ranks Indian infrastructure 84th out of 144 countries. Not surprisingly, executives want to see tremendous effort and focus in this area from both policy-makers and public-private partnerships. In fact, there is demand for a greater level of private involvement to increase competition. Some executives said that the nation's policy framework itself is lower priority than some of the basic factors that make India competitive as a manufacturing destination. In discussing the hard infrastructure challenges in India, one executive stated, "We don't have a clue how this is going to happen."

Develop infrastructure to bring industry, not vice versa: The prevailing sentiment was that it is irrelevant whether government, public-private partnerships or industry develop infrastructure. Historically, the model in India has been for industry to begin establishing itself in a location, and power supply, roads, water and other capabilities are added until the grid is overloaded. Executives said that this is the wrong way to build domestic capabilities and attract foreign direct investment.
Executives consistently noted that specific industries have specific needs when it comes to infrastructure. For example, auto executives and other consumer product companies called for improved roads to spur customer demand and efficiently deliver products to market. For technology industry executives, telecommunications infrastructure is critical. Regardless of industry, the overriding message was to invest heavily in all forms of hard infrastructure, both for domestic purposes and to attract foreign direct investment.

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Create industrial clusters that result in integrated industrial townships with state-of-the art infrastructure: Beyond direct measures that government can pursue in a country's infrastructure development (building ports, highways, power grids, etc.), executives were generally highly supportive of clusters that provide infrastructure and land use on the basis of zoning, clean and energy-efficient technology, necessary social infrastructure, skill development facilities, etc., to provide a productive environment to persons transitioning from the primary sector to the secondary and tertiary sectors.

Support the creation of industrial clusters by enacting regulatory improvements that remove complexity and uncertainty in areas that include land acquisition improvements, labour laws and taxation.

Develop showcase clusters to immediately demonstrate the benefits through such initiatives: Executives supported the creation of two or three showcase clusters developed quickly and immediately to illustrate the benefits that result in these integrated environments. Citing Tianjin, China, as an example, many executives believed that states would be more inclined to buy into the concept of national manufacturing zones. Said one executive: "If we wait for all stakeholders to be aligned, we will wait forever."

Relax policies defining reasonable levels of foreign direct investment

Executives consistently believed that key to growing India's manufacturing sector faster than GDP is an environment that promotes both private and foreign investment. These perspectives are supported by the National Manufacturing Policy, which states, "Foreign investments and technologies will be welcomed while leveraging the country's expanding market for manufactured goods to induce the building of more manufacturing capabilities and technologies within the country." However, many executives believed current laws are restrictive to supporting the objectives outlined in the policy and noted the following recommendations.

Review and reform regulatory restrictions on foreign investments in sectors deemed important and strategic to India's growth objectives: In the face of the economic downturn in Europe and the United States, India receives more and more attention from international developers, investors and financial institutions. However, the perceived lack of commitment from the government to relax regulatory controls and other factors are contributing to an environment of uncertainty among these stakeholders. Achieving the growth objectives outlined in the National Manufacturing Policy will be driven in large part by participation from international organizations and removing restrictive barriers of entry and regulatory controls is critical to the process.

Enact basic financial sector and capital market reforms to attract private investments: While executives said India's growth is appealing to private investors, many also believed that current policies work against growth by adding risk and cost to private investments, which discourages capital inflow to the manufacturing sector. Specifically, cost of capital is extremely high, and private equity investors have limited exit strategy options.

Remove uncertainty from India's regulatory and legal environment

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Most executives participating in the discussions agreed that the "regulatory goalposts" need to stop moving in India and that the inconsistency and arbitrariness of regulations is a hindrance to making investments.

Executives said the lack of transparency diminishes private sector confidence and opens the door for increased levels of corruption. Many noted that the National Manufacturing Policy cites regulatory reform as a key pillar in strengthening the manufacturing base, as it aims to centralize and rationalize business and environmental regulations among the various states and federal agencies. Executives also applauded Web enablement under the policy on matters related to business application, reporting and regulatory compliance. These measures, once implemented, would resonate with business leaders.

Other recommendations noted by executives include the following.

Implement laws that build trust among stakeholders, rather than laws that reinforce an environment of distrust.

Address the basic hurdles and fundamental issues that keep businesses from growing, developing and investing in India: Executives said regulatory reform, land acquisition reform and financial sector regulation are needed to spur investment and growth. Participants consistently supported environment and safety regulations that are in the best interest of society but encouraged limiting the scope of such regulation to not impose overly burdensome regulation on business.

Remove and rationalize regulations to accelerate the pace of decision-making and approvals: Executives said that accelerating the pace at which decisions and approvals are made would significantly benefit the Indian economy. Interestingly, executives noted the importance of improvements in this area in the context of foreign organizations looking to invest in India, as well as domestic companies looking to reinvest in the country. One executive noted, "Some large companies in India seem to be focusing more on investment overseas than investing in India due in part to the regulatory burden and slow pace."

Develop a more liberal and simplified tax structure with a greater level of transparency to improve consistency of interpretation

Executives participating in the discussions consistently called for improving tax policy in India – both in terms of facilitating more consistent interpretation and in terms of providing greater tax incentives and benefits related to priority areas that support competitive manufacturing. Vocational training, infrastructure and R&D were cited as specific areas that would benefit from such tax incentives.

Create a sustained competitive advantage by encouraging technological innovation and movement up the value chain

While India's technical talent is recognized the world over, many executives noted significant gaps in promoting interaction between industry and research institutions. Executives said the following actions would help to facilitate the connections that are required to create an environment that results in the ability to sustain the development of technological innovations.

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Improve the intellectual property filing process and create an environment that results in an increase in the number of filings.

Develop industry-led standards and create activities that result in global acceptance of those standards.

India's approach to the automotive industry, which is a leading manufacturing sector, was noted as a success story in efforts to develop industry-led standards. The automotive industry took up policy entrepreneurship to bring all stakeholders together to work towards a common vision. As a result, an ecosystem was created in which auto-producing hubs in Chennai, Pune and the National Capital Region each benefitted from clusters of allied industries supplying components and parts to enable the big companies to mass produce.

Encourage and fund risk taking to create an environment which rewards efforts that drive and support activities that move technological innovations from R&D, through applied research to full commercialization.

Baba Kalyani, Chairman & MD, Bharat Forge, India and Seo Bo Shin, MD & CEO, Hyundai Motors India

Create inspirational science and technology goals and make attainment of requisite skills needed to attain those goals an aspiration.

Build India's Department of Science & Technology into a world-class organization to encourage greater collaboration with industry.

Share and apply best practices and knowledge across states to encourage innovation.

Provide government incentives for small and medium-sized enterprise manufacturers

The role of small and medium-sized enterprise manufacturers cannot be overstated in the development of a strong manufacturing base. SMEs in India contribute approximately 22% to GDP and an estimated 40% of manufacturing value-add, as well as 35% of merchandise exports. Due to their size, these manufacturing organizations often face challenges that are less pressing or simply non-existent for larger manufacturing organizations. Fortunately, the National Manufacturing Policy recognizes this problem and identifies a series of policy proposals for improving access to finance for SMEs in the manufacturing sector.

Executives participating in the discussions – primarily leaders of large, multinational Indian firms – were supportive of special treatment for SMEs and emphasized the following to benefit micro, small and medium-sized manufacturers.

Provide access to the basics beyond access to adequate and timely financing, to include availability of suitable technology, marketing resources and skilled workers. Executives cited the critical role that SMEs play in the manufacturing ecosystem, including their ability to take risks on a smaller scale to promote

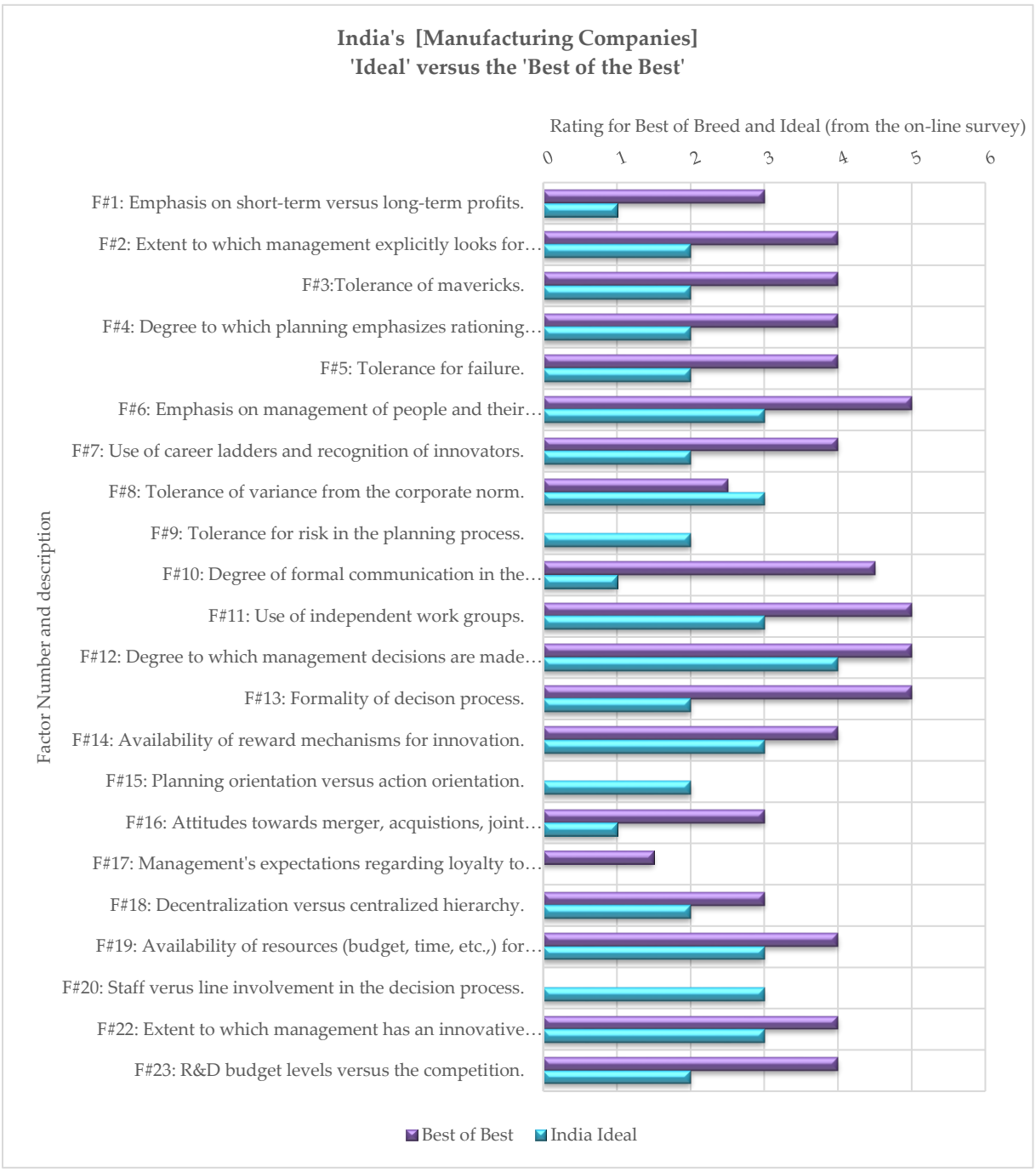
Building, sustaining and articulating innovation management best practices

CIO – Innovation management best practices
India's manufacturing sector - best practices not yet in place

innovation. The cluster approach will significantly promote SMEs and address some of their unique challenges related to access to credit, adoption of new technologies and development of human resources. Finally, it is important to note trade policy came up during the interviews and working sessions in the context of policy-maker support in boosting exports to meet India's aggressive growth targets, and energy policy was touched upon by executives commenting on the criticality of infrastructure. However, these topics were not regarded as priority in the face of the more pressing policy issues previously noted

CIO – Innovation management best practices
India's manufacturing sector - best practices not yet in place

Appendix C
Chart Showing On-line Survey Results
Comparing Respondents 'Ideal' with the Best of Breed



India's 'Ideal' is much lower than the Best of Breed; the bar should be set much higher.

CIO – Innovation management best practices
India's manufacturing sector - best practices not yet in place

Appendix D
Dun and Bradstreet. "Emerging SMEs of India

Dr Manoj Vaish, President & CEO – India, Dun & Bradstreet

Dun & Bradstreet India takes another step forward in its commitment to service the small and medium enterprises in India. In a strategic association with the SME Rating Agency of India Ltd (SMERA), D&B India has conceptualised the publication series, **Emerging SMEs of India.** "Emerging Textile SMEs of India" is the second publication in this sector-based series, after the successful launch of "Emerging Auto Component SMEs of India" in September 2006.

The SME segment has come into the limelight, with increased focus from several government institutions, corporate bodies and banks, and is rightly viewed as an agent of economic growth. In addition to the government's thrust towards promoting the SME segment, several latent business opportunities have also opened with globalisation and sustained growth of India's economy. However, there is a lack of structured information on India's SME sector. A sincere attempt to fulfil this lacuna was our principal rationale in undertaking this exercise.

This unique publication is in recognition of the significant contribution made by SMEs to India's industrial development. It is estimated that SMEs account for over 90% of industrial units in India and 40% of value addition in the manufacturing sector. They contribute 35% to India's merchandise exports. This one-point reference document will provide a platform that enhances the visibility of these important constituents of the Indian growth story.

The publication on the Textiles sector was a unique undertaking and involved contacting over 8,000 companies, screening them based on turnover, investment and employee size. The result is a repository of authenticated information on the truly small and medium enterprises that have a turnover of less than Rs 1,000 mn.

The new business environment for textiles, defined since the phasing out of the Multi Fibre Arrangement in January 2005, has brightened prospects for Indian textiles and clothing trade. In 2005-06, textiles exports were valued at US$ 17 bn, having recorded a 22% growth, y-o-y. This robust growth is expected to continue over the next 2-3 years, led by cotton ready-made garments and home furnishings. Apart from earning foreign exchange, the sector also has significant employment potential. The insights included in the publication are based on a statistical analysis of collated data and highlight interesting benchmarks for textile companies in the SME segment.

The SME publication preserves the D&B commitment to providing information and knowledge that facilitate informed business decisions. D&B India has drawn on its time-tested expertise in the information business to the benefit of the small and medium companies, as this publication amply reflects.

Finally, I would like to thank the SMERA for their consistent support in this exercise. I am sure you will find this issue of **'Emerging Textile SMEs of India'** useful and I look forward to your suggestions.