

# A NEW INDUSTRIAL POLICY FOR INDIA

## Back to the Drawing Board



**CUTS INTERNATIONAL**

**WITH**

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## EXECUTIVE SUMMARY

The Indian government is feeling the need for a new industrial policy, principally because the present pattern of economic growth is not producing sufficient numbers of jobs and livelihoods in the country. Industrial policy until the 1980s was driven by the theory that government must closely manage the flow of investments into selected industrial sectors to nurture their development. Dissatisfaction with this approach, primarily because it stifled entrepreneurship, made the government change its approach from the 1990s towards a free market approach with the expectation that market forces would cause industrial growth to accelerate. However, that did not happen. India's manufacturing sector, which should have been a principal driver of industrial growth and creator of jobs languished at 16% of the economy since the 1990s. While the services sectors grew, overall job growth did not keep pace with the growth of the population.

Before embarking into the details of a new industrial policy, it is necessary to consider what the architecture of an industrial policy should be. In other words, start with a picture of the forest before getting into the trees. Therefore, these recommendations for the structure of a new industrial policy for India begin with an examination of the purpose and paradigms of industrial policy.

The government is expected to formulate and implement policies to produce more jobs and livelihoods. Jobs and livelihoods cannot be sprinkled into the economy by government, except jobs on the government's own payrolls. Jobs and livelihoods must grow out of the economy, and the government must create conditions for more jobs and livelihoods to grow, and more productive enterprises to form and grow so that more jobs and livelihoods grow. The questions before the industrial policy-maker are: what are the conditions of the soil required; what are the nutrients to apply; and which are the weeds to watch out for and how will they be prevented. Combinations of many interventions are required, in the right proportions, to induce the economy to generate more jobs and livelihoods.

An integrated **systems'** approach is necessary to develop an effective industrial policy; and, therefore a **whole of government** approach is required to develop the policy and implement it.

This note presents an analysis of forces within the economy, the interactions amongst which create the conditions for faster growth of jobs and livelihoods. These are summarized in the diagram below.

Seven forces are highlighted. Each requires good policies to harness it, and to direct it towards conditions for faster economic growth with more jobs and livelihoods. These forces, working together, drive the internal 'engine of growth' in the economy—of jobs creating incomes, incomes creating demand, demand drawing investments, and suitable investments generating more jobs and livelihoods.

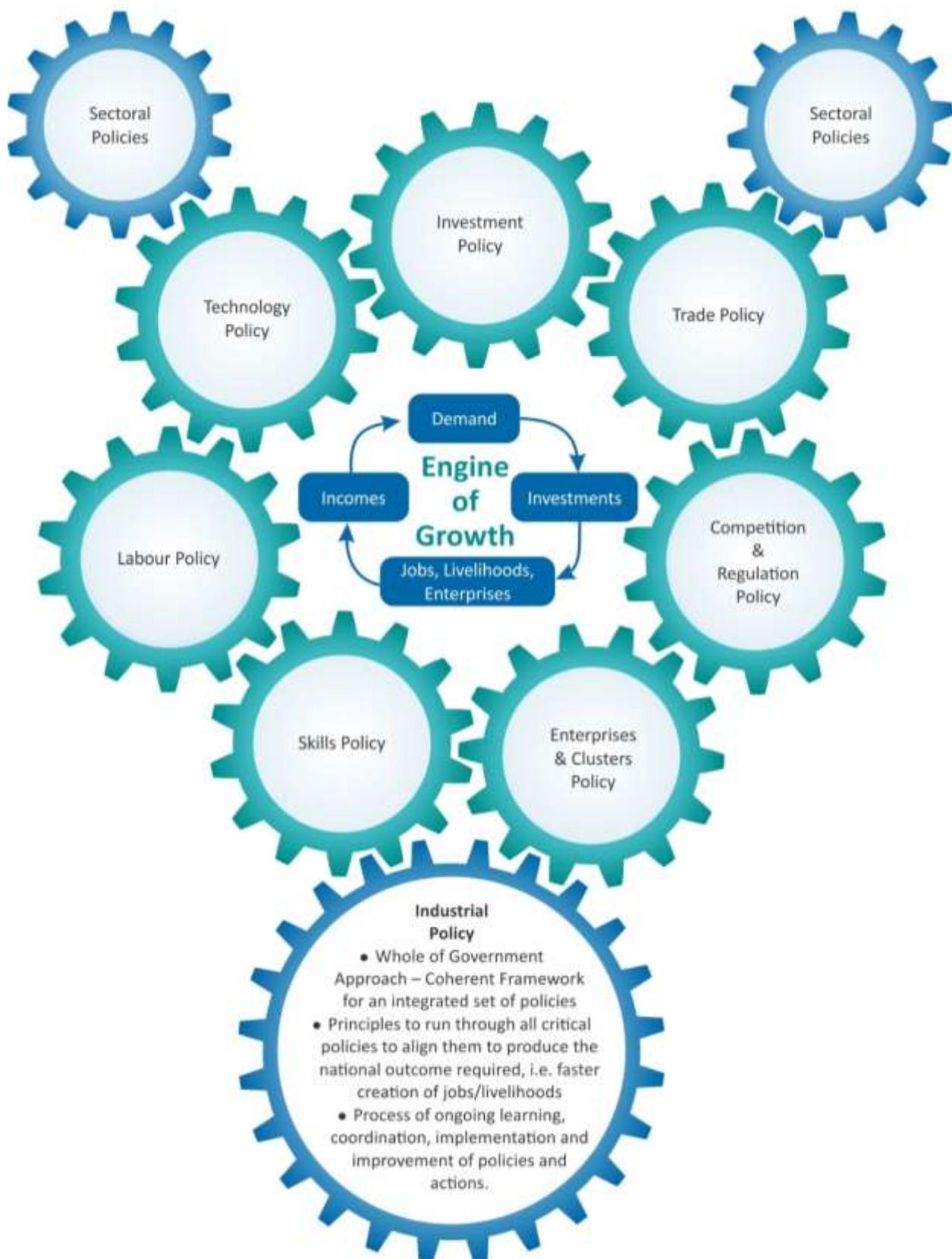
Sectoral policies can be developed for selected sectors, where the country has a competitive advantage, and which can provide opportunities for jobs and livelihoods in the country. However, in these sectors too, the fundamental forces that will create the conditions for more enterprises, more jobs and livelihoods, and more economic growth, are the same. Therefore, while sectoral policies can be a valuable supplement to an industrial policy, an effective industrial policy cannot be merely a collection of sectoral policies.

As explained in the opening section of this note, “industrialization” is the process by which a country’s economy moves into higher value-adding sectors, requiring more skills in people (and enabling them to earn higher incomes too). Industrialization is a process of people within a country, as well as enterprises within the country acquiring capabilities they did not have before. Thus, it is a process of ‘learning to do’ what could not be done before. Policy-makers must stimulate this process of learning, rather than prepare static blue-prints and plans for industries. Therefore, policy-makers must also be learners, along with the enterprises.

The note explains the critical sub-systems viz. the areas in which specific policies will be necessary (within the overall architecture of policies). These policies will be evolved by the stakeholders and experts concerned with these areas. Therefore, the industrial policy will not describe these policies. But it must highlight the principal issues these policies must address to drive the engine of growth for more jobs and livelihoods. We hope that, in a ‘whole of government’ approach, these issues will be considered by the ministries/agencies responsible for policies in these areas, so that India’s new, and urgently required, industrial policy can deliver the outcomes expected of it, viz. faster creation of enterprises, jobs, and livelihoods across the country.

The policy can only be as good as the process by which it is produced. Finally, the note explains the architecture of an on-going learning process that is essential for an effective industrial policy. We hope this new approach is adopted.

## A 'WHOLE OF GOVERNMENT' SYSTEMS' APPROACH



## RETHINKING INDUSTRIAL POLICY: PARADIGM AND PURPOSE

‘Industrial Policy’ is back in fashion after 25 years. It had become a bad word amongst economists and policy-wonks from the early 1990s with the dominance of the Washington Consensus over global economic policies.

In 2009, Prime Minister Manmohan Singh asked the Planning Commission to suggest changes in policies required for India to accelerate the growth of its manufacturing industry. Whereas China’s manufacturing sector was over 34% of its economy and had contributed greatly to the rise of incomes in China, India’s manufacturing sector had been languishing at 16% of GDP since the ‘big bang’ reforms of 1991. India’s capacity to produce capital goods—the machines and tools that are the muscles of industrial capability—was as strong as China’s in 1991, because of compulsions until then to produce capital goods in India, on account of shortages of foreign exchange as well as government policies of building self-sufficiency for strategic and ideological reasons. By 2009, Chinese capital goods production capacity was about fifty times as large as India’s and India was importing machinery, power generation equipment, and other capital goods in increasing quantities from China. India’s industrial sector had become much smaller than China’s and lost its depth too. Why? Could it be that India had been trying too hard to be a ‘good boy’ in international economic circles, whereas China had maintained a vigorous ‘industrial policy’ to build its own capabilities, despite accusations about being ‘protectionist’, of ‘stealing’ intellectual property, and being ‘a currency manipulator’ too?

### The Paradigm

India is not the only country concerned with the decline of job growth in its manufacturing sector with the rise of Chinese industry. The USA, the champion of the Washington Consensus against industrial policies that India had followed with unhappy consequences, is too. Away from the public glare, a small group of economists and policy-makers from many countries, including India and the US, met in Rio de Janeiro in May 2012 to rethink ‘Industrial Policies for the 21<sup>st</sup> century’. The group agreed on some fundamentals of industrial policy. These views are also supported by recent research into the processes of industrial growth and the architecture of industrial policies by Joseph Stiglitz, Dani Rodrick, Ricardo Haussmann, Ha Joon Chang, and others.

First, the process of a country’s industrialization is a process of enterprises in that country acquiring capabilities to produce more complex products that they could not do before. Workers learn skills they did not have before. Managers of enterprises learn to apply technologies manage processes that they could not before. And government policy makers and implementers learn how to create conditions for industrialization, which they could not earlier.

Second, this process of learning and building capabilities happens in a competitive world. Therefore, later industrializers must learn faster than those ahead of them to compete with them, and policy-makers must create conditions to ‘nurture’ industries in their country until they are strong enough for more open competition. Even the US protected its weaker industries against competition from stronger British and European competitors in the 19<sup>th</sup> century. When they have become strong, the industries want world markets opened to them so that they can expand, and they become champions of free trade and rail against ‘protection’ in other countries.

However, there was less clarity about how the process of learning should be managed. The knowledge the country’s enterprises need is available with their advanced competitors outside. How should it be acquired? What incentives can be provided to the foreign companies to pass on this knowledge? And what will be the incentives for domestic enterprises to learn to become independent rather than leaning forever on foreign knowledge?

‘Innovation’ has become the mantra of the 21<sup>st</sup> century. Innovation is the production of something that is novel, or the production in a novel way of something that is known. Innovations are not reproductions of something already known produced in a known way. Innovations happen when there is no one to get the full knowledge from. What conditions should policy-makers create to grow more competitive domestic industries by processes of innovation rather than by only ‘catch-up’ learning from other countries?

Industrial policy, in its guts, must be a process of facilitating rapid learning and innovation in enterprises located within the country: small ones and large ones in a sector, that learn and grow together to create a strong, competitive capability which the country did not have before. Therefore, to shape an effective industrial policy, *policy-makers must understand how organizations learn* (and people within them learn) and they must create conditions for them to learn faster.

## **The Paradigm**

The reason why governments of many countries, including the US and India, are feeling the need for a policy to grow industrial activity within the country is the political pressure to create more jobs within the country. Therefore, the measure of success of a national industrial policy must be whether it will create more jobs.

When economists pointed out that India’s manufacturing sector had not grown as fast and as large as China’s had, the metric they used was the proportion of manufacturing output in India’s GDP, which was 16% in 2009 compared with 34% in China, as mentioned before. Therefore, the stated goal of the new policy became to increase India’s manufacturing output to 25% of GDP in ten years. The belief was that if manufacturing output was a larger part of the economy, there would be more jobs overall. This is not necessarily so. It depends on the pattern of manufacturing enterprises. Large, capital intensive plants (employing few people) will increase manufacturing output (and can increase the proportion of manufacturing in GDP too if services and agriculture do not grow as fast). However, overall employment may not increase enough. Therefore, the pattern of manufacturing and industrial enterprises promoted by the policy must fit the purpose of the policy, which is to increase jobs.

Economists, many of whom have been obsessed with gross GDP growth as a panacea, have begun to admit that policies to create more growth are not good enough. Growth must result in more ‘inclusion’ in the growth; and ‘sustainability’ of the growth too (in terms of the effects of growth on the environment). The principal means by which citizens are included in economic growth is through their ability to earn incomes, i.e. the jobs and livelihoods available for them. Poverty is reduced, in an economically sustainable manner, by people becoming engaged in work that provides them adequate incomes. Other forms of income transfers, such as price subsidies for the poor, universal basic incomes, etc. are less sustainable economically. Moreover, they do not provide people with the dignity of supporting themselves that good jobs and livelihoods give them.

Sustainable jobs in sustainable economic growth cannot be sprinkled into an economy by governments. They arise from within the economy in an organic process of growth. The interaction of many forces in the economy—patterns of investments, growth of competitive enterprises, learning of new skills and capabilities, growth of demand, etc.—creates jobs.

The test of the success of an industrial policy must be the numbers of good jobs and livelihoods it generates, and the numbers of competitive enterprises it generates to provide the jobs and livelihoods. Therefore, an ‘industrial’ policy must be a policy for ‘jobs, livelihoods, and enterprises’.

The processes it must stimulate in the economy are processes of more rapid learning of new capabilities by enterprises, people, and even policy-makers.

This is a paradigm shift from approaches to ‘industrial policy’ in the past. The underlying approach to industrial growth in India until the 1990s was a top-down planning approach, of attempting to manage the inputs-outputs of the economy through licenses to produce and allocations of resources. This mechanical model of economic management dampened the spirit of innovation and weakened processes of learning within enterprises. After the reforms of the 1990s, the paradigm shifted to the other extreme, of ‘leaving it to the market’, and hoping that freedoms to invest and produce would result in the growth of more jobs and livelihoods. However, enterprises could not be given complete freedom. Regulations were necessary to protect the rights of workers and consumers, and of local communities for their environmental assets. In the absence of an over-arching logic and purpose for these processes of regulation, they often appeared mindless, and they tied up enterprises in too many knots.

A ‘systems view’ is required to connect many parts of the system and many policies—for investment promotion, trade regulation (externally and internally), enterprise regulation, labor policies, etc.—to enable the economy to deliver the results citizens want from growth viz. better jobs and livelihoods.

Boundaries between industries have blurred. Telecom companies are becoming financial services companies too. Online platforms such as Uber and AirBnB are not merely technology companies: they also provide transportation and accommodation. Manufacturing industries are being ‘deconstructed’ by technology. ‘Services’ such as industrial process design, and plant management, which are integral to a manufacturing enterprise, are now being delivered to factories from remote locations, even in other countries, by service industry enterprises with only white collar workers. Processing of agriculture products near the farm, using machines, is a ‘manufacturing’ activity that adds value to materials and converts them to higher value products, even though the material processed is a natural, agricultural product.

Since the purpose of an industrial policy is to generate more income-generating opportunities for people, the definition of ‘industry’, should be broadened to cover all productive and creative activities in which people are engaged from which they can earn incomes. An industrial policy must stimulate forces within an economy that generate more value-adding activities to create more enterprises, jobs, and livelihoods, howsoever the sectors in which they fall may be defined. Therefore, the interactions of the critical forces within the economy that create the conditions for growth of enterprises, jobs, and livelihoods must be understood before determining what policies will produce the fastest growth of industries and jobs.

## A SYSTEMS’ VIEW

Like the human body, an economy is a complex system, composed of many complex sub-systems, each of which performs a function to enable the entire system to remain healthy and to grow. The brain, the heart, the liver, the lungs, the muscular system, etc. are all essential components of the body. Each is designed to perform a specialized function; and all of them must be healthy. Often, giving medicine to improve one component can have side-effects on others and make the whole body unhealthy, rather than better. Therefore, it is essential to have a model of the whole to understand the inter-linkages amongst the sub-systems before one fixes the parts. Otherwise, improvements of a part of the system can have unintended consequences for other parts of the system, weakening the system. Without a good systems’ view, quick, bold, policy fixes can backfire.

Some examples of such ‘fixes that backfire’ are:

- Increasing the numbers of people provided with skills training faster than growth of employment opportunities for them, which increases dissatisfaction within the economy
- Reducing taxes, and providing excessive subsidies to attract investments, which reduces state funds for education and health-services, resulting in deterioration in quality of human resources for industry in the long run
- Making it too easy for employers to fire employees (with the expectation that they will hire more), which reduces the incentives of employers to invest in improving skills of employees, resulting in less skilled people available in the economy
- ‘Inverted duty’ structures, wherein import duties for some materials/products are reduced to give a boost to some segments of industry, but which makes it more difficult for domestic producers of those materials/products to compete, skewing the structure of the industry. (Indeed, this is one of the reasons that the capital goods sector has weakened and the ‘depth’ of Indian industry has reduced)

The industrial system is a complex system that requires many parts to function well and in harmony: flows of investments for growth, development of skills, regulation of trade, etc. Therefore, it requires policies for many functions: investment policies, trade policies, labor policies, taxation policies, etc. Development of these policies requires experts in the subjects. It is customary to assign responsibility for the development of each of these policies to a ministry or department. However, the inter-actions amongst the policies must be understood and managed to ensure that the entire system delivers its desired outcomes. This requires a ‘whole of government’ approach to industrial policy, even if one ministry or department is assigned the responsibility to develop it.

## EIGHT SUB-SYSTEMS

A systems view is like an X-ray (or MRI) view into a complex system. It reveals structures and flows within the system. It shows connections between them not visible on the surface.

### A. The Engine of Growth (Sub-system 1)

The primary sub-system of industrial growth is the system connecting investment, demand, and incomes. Investments will be made when there is an expectation of demand for what will be produced by the investment. Demand will arise if their incomes. Incomes will grow if people have jobs that provide good wages.



Henry Ford - I saw the systemic loop connecting wages, demand, and growth. When he doubled the wages of workers in his factories (mostly immigrant, unskilled workers), his competitors protested that he was spoiling the market. Ford said he wanted to increase demand for his cars, so he wanted to pay workers more so that they could afford to buy the cars. Of course, the cars had to be affordable, even with the higher wages. So, his innovations were the simplicity of the car (the legendary Ford Model T) and the design of a production system (the assembly line) that required workers to perform simple, repetitive tasks, and enabled the total cost of the cars to be lower even though the workers were paid higher wages. Innovation in the design of the production process enabled higher wages (and demand) without increasing overall costs. Expansion of demand in the economy induced further investments to expand production. Thus, the automobile industry expanded, and with it jobs. It became a major engine for the growth of the US economy.

Ford's innovative engine of growth stirred up internal demand leading to profitable investments, with growth of jobs and incomes within the economy. It is a model for India's rural economy. Innovations in enterprise design and production methods can engage more people in the rural economy to produce added value products locally, and services for the local economy. Thus, local economies can grow, creating more jobs within local areas. In fact, growth of rural demand can increase demand for products from urban factories, thus providing a fillip for investments and jobs in urban areas too, a phenomenon seen between 2007 and 2012, when rural Indian demand enabled substantial growth of sales of two-wheelers (and other products) though the global economy was in a slump.

Stirring up demand within the economy as the engine of growth is more difficult (though more sustainable perhaps) than tapping into demand outside the economy to provide the impetus for investments and growth. Indeed, this is the logic of 'export led growth' which has enabled growth of other Asian economies including China. A country's cheaper and more plentiful labor resources can be used to cater to demands in other countries, which will attract investors (foreign as well as domestic) to produce in the 'low cost' country and create more jobs.

However, there can be no escape from 'learning new capabilities' within the country. Not only must workers learn new skills, but managers of enterprises must learn how to use the labor well, and how to manage a system of production and logistics to enable the enterprise to deliver products and services to its foreign buyers at lower total costs, more quickly and more reliably than competitors in other countries can. 'Lower labor costs' is not sufficient to expand sales and production and to attract more investments. Other 'factors of production', especially the 'technology' (and capability) to manage a complex system must be continuously improved too.

## **B. The Investors' Story (and Investment Policy—sub-system 2)**

Investments are attracted when there is an expectation that there will be a demand for the products and services that the investment will produce, as mentioned before. However, that is not all.

Effort is required to convert the investment into actual output. Therefore, smart investors also assess the difficulties in setting up and operating enterprises in the country. This is the rationale behind the 'ease of doing business' framework promoted by the World Bank, and behind the Indian government's thrust to make India and its states easier places to do business in.

While several positive factors such as a large and growing domestic market, and the availability of a large pool of manpower, have brought global investors to India, India still has a long way to go to make it easy to 'do business' in India. Regulations are cumbersome for investors. And, the implementation of regulations by inefficient and even corrupt bureaucracies makes life even more

difficult for investors and managers. Government departments continue to work in silos, and businesses continue to find it difficult to obtain timely approvals. Reduction of regulations is easier than improvement of the quality and implementation of regulations. The latter requires consensus amongst contentious stakeholders, as well as reforming administration—both of which are difficult. Therefore, to attract more investments, governments are tempted to simply reduce regulations of investors and enterprises. ('Government is the problem', as Ronald Reagan said.)

However, this easy fix results in the throwing of the baby (good regulation) out with the bathwater (bad administration of regulations). Investments are attracted but, in the longer run, the consequences of poor regulations of the system appear. This has been seen in the financial system of the US, where the tussle between the need to release, as well as to curb, the 'animal spirits' in the financial sector continues. The systemic consequences of reducing labor regulations (to attract investments) was realized in the World Bank's Ease of Doing Business framework early on. Merely reducing labor regulations, to make it easy to 'hire and fire', would reduce incentives for employers to invest in the skills of workers. Moreover, societal tensions, caused by strife between workers and employers, could make the country a less attractive place for investors. Therefore, governments must focus on consultations with stakeholders to improve labor regulations to make the country a sustainably attractive place to produce in.

There is need to improve regulations in many areas: the management of environmental impacts of industrial activities, labor regulations, land use, etc. It is equally important, as mentioned before, to improve the capacity to implement regulations effectively.

Industrialization is a process of building new capabilities, as mentioned before. Often, the technology and knowledge required is available with foreign companies, who may be attracted to invest in India to sell to the Indian market. The government should create conditions to encourage such companies to build technological capabilities in India, through terms of joint ventures, phased indigenization programs, etc.

Keeping in mind that the principal aim of an industrial policy is to generate more employment for people in India, the government should encourage investments by both, foreign and domestic investors that create more work/jobs in India. Therefore, concessions from regulations and/or subsidies provided to attract investments should be linked more to the numbers of jobs created, than to the amounts invested as they presently are.

Governments of most countries provide incentives and/or freedom from regulations for small enterprises. However, when these incentives and/or freedoms from regulations are related to the size of the enterprise alone (capital invested, numbers of persons employed, turnover, etc.), enterprises are reluctant to cross the thresholds and lose their incentives and protection. Therefore, they split into several small units.

The purpose of freedoms given to small enterprises, and incentives to them, should be to enable them to learn and grow faster. Therefore, whatever freedoms are given to them from regulations and incentives should be time-based, rather than size-based. They should be available for only a few years, during which the enterprises should acquire the required capabilities, and should be withdrawn thereafter. In this way, the incentives for enterprises and their owners will be to learn and grow rather than to remain small behind a shield of protection. Those enterprises that cannot make it should not continue to be spoon-fed by the state.

## 1. SOME KEY ISSUES FOR AN INVESTMENT POLICY

- FDI policy
- Joint ventures (technology transfer)
- Phased localization programs
- Incentives for employment and skills rather than for capital investment
- Incentives linked to time to set-up, rather than to size of enterprise
- XXXX
- XXXX

### C. The story of the ‘Labor Market’ (and Labor Policy—sub-system 3)

India is not short of people. In fact, India has more people to employ than any other country in the world! The problem, say investors and employers, is that people in India do not have the skills required. Therefore, there has been a great effort by the government to produce more skilled people. A goal of 500 million skilled persons was announced by the UPA government. The NDA government that followed, has focused even more on skilling, setting up a separate ministry dedicated to it.

However, young people going through the skilling programs are not getting jobs commensurate with their expectations. Some recent studies report that only 20% of those skilled through these programs have a job after six months. At the same time, employers complain that the skills learned do not match what they need. Thus, employers cannot grow their enterprises, or they invest in machines and automation instead of hiring more workers, if they can afford to. Thus ‘jobless high growth’ continues. A new solution is required to provide better skills and more jobs to India’s youth.

How are skills learned and honed? By doing the real work, or close simulations of the real work. Skills to perform complex tasks, and in settings in which interactions with others in the system are necessary to enable the whole system to be productive, cannot be completely learned in a physical or virtual class room. It is no surprise, therefore, that employers complain that prospective employees, even those from prestigious institutes of engineering (and those from the vocational industrial training institutes) do not have the ‘soft’ skills and the ‘judgement’ abilities required to perform in real life settings.

Economists say that India must fix its ‘factor markets’ to enable faster growth of enterprises. Markets for land and labor are mentioned as two that need fixes urgently. Markets, in simple terms, have a supply side and a demand side. If a market is not functioning, the problem may be in the functioning of supply side institutions, or demand side institutions, or in the connection between them, which is settled by price discovery mechanisms which, according to free market advocates, must be free to find their own level. Ergo, to make a market function smoothly, it must be made easy for market participants to buy and sell whenever they want to.

This simple view of a market works well in markets for commodities, where the product and its consumer can be separated into the supply side and the demand side of the market. However, where the consumer must also be the producer, ‘market forces’ are not easy to disentangle into supply and demand. Labor is not a commodity like any other. Labor can increase its own value if it is motivated to learn and provided the means to do so. Machines, materials, land, and other such factors of production, do not have a motivation to improve their own abilities. Nor do they, apart from newly developed ‘intelligent’ machines, have the ability for this. The only resource that an

enterprise has, which can have the motivation, and the ability to improve itself, are human beings. Indeed, while the value of all other resources (except land, which is a resource naturally constrained in quantity) depreciates over time, human beings are the only ‘appreciating assets’ of an enterprise—provided they are motivated and enabled to continue to learn.

In the ‘labor market’, the consumer (employers) of skilled persons must also be a producer of skilled persons, so that the volume of supply in the system can be increased, of which the consumer (employers) will be the beneficiary. As Robert Solow said, “sellers of standardized commodities may not be offended by low prices, but a worker’s incentive to provide effort depends on the perceived dignity of working conditions and fairness of wages”. Therefore, employers should have an orientation (and incentives) to retain and invest in their appreciating, human assets, and create good and fair working conditions, rather than to fire them quickly whenever their business does not require them.

No doubt, enterprise owners and employers must have ‘flexibility’ to adjust the sizes of their work-forces in an open economy, in which economic fluctuations, and changes in competitive positions, can result in fluctuations in demands for an enterprise’s products and services. However, it is the very dynamism in the economy that requires also that managers and workers in enterprises acquire new skills rapidly. Therefore, if enterprises keep discharging employees with little interest to add to their skills, where will workers improve their skills and learn the new skills required. Employers have been using ‘labor contractors’ to provide them workers whenever they need them, and at the lowest cost possible too. Thus, contractors are giving employers the flexibility they need, and lower costs too. However, the contractors are not motivated to add any value to the workers. They merely provide a market mechanism to connect demand with supply.

As suggested before, employers, for their own longer term interests, should consider their employees as valuable ‘assets’ with whom they can improve the ‘total factor productivity’ of their enterprises. ‘Contractors’ too could play a valuable role to upgrade skills of workers while also providing the ‘sump’ for surplus workers of an enterprise during down-turns, if they trained workers during the down-turns (or trained new workers before offering them to employers). Thus, new institutional solutions can be developed to meet the needs for flexibility and continuing skill development in the economy.

Finally, a note regarding organizations for representing employees’ interests. Unions have been often considered to be a major problem in reforming labor laws. They are seen to be representing the needs of only the highly paid workers in the organized sector who are their members. In India, they are also suspected to represent the interests of the political parties to whom they are affiliated, rather than the real needs of workers. Whenever issues of ‘fairness’ to employees must be laid alongside needs of employers for flexibility and lower costs, it becomes essential to provide employees with institutional mechanisms for presenting their views collectively. It is worth noting that there have always been strong unions in Japan and Germany, two countries in which industries continue to be competitive in spite of high wages and strong currencies compared to most other countries.

Processes for representing the interests of employees constructively must be strengthened, and the institutions required must be improved, for India to manage the economic need for flexibility with social need for fairness, while it grows its industrial strength.

## 2. SOME KEY ISSUES FOR A LABOUR POLICY

- Extension and reform of social security systems
- Institutional arrangements to promote training during down-turns
- High quality 'staffing' firms
- Apprenticeship systems
- Institutions for representing employees' needs
- XXXX
- XXXX

### D. The Learning Escalator (with an Enterprise Policy—sub-system 4, and a Skills Policy—sub-system 5)

Capabilities are built progressively, from simpler levels to more complex levels. Thus, in every profession, every art, and every sport, capabilities progress through levels of proficiency: from the raw apprentice to the maestro. Similarly, vocational skills and enterprise management abilities are also built progressively.

Smaller, and less 'formal' enterprises in an economy are the lower stages on the skills/industrial management capabilities escalator. They use less capital and more labor. They also have simpler production systems and use less advanced technology. They enable people such as displaced agricultural labor with little technical skills, or small entrepreneurs with limited management experience, to join the industrial economy. Then, if these small enterprises are in an environment in which they can grow larger, both workers and managers can move up to higher levels of technical and management competencies. Going further, some 'experienced' workers and supervisors are recruited by larger firms. And some entrepreneurs, having acquired more experience and better connections into the formal economy, grow their firms even larger.

Small firms are not as 'productive' (in terms of output per worker employed) as large firms are. However, as do schools, they also perform a function of building skills in the economy, of taking in people with no knowledge and skills and putting them onto the lower stages of the industrial learning escalator. Therefore, their productivity should not be measured only by how much output they produce per employee. They add to the productivity and growth of the economy in other ways.

Because of their relative 'informality' compared with large, formal, and more 'productive' enterprises, small enterprises have more flexibility too. They are seed-beds for innovations. Their forms can be more easily adjusted to fit conditions in different parts of the country and to different levels of skills available in localities. Therefore, their smallness and informality are not bad qualities. They can be advantages.

Nevertheless, small and informal enterprises have limitations. Because of their size and informality, they are unable to access resources easily from the formal system: resources of finance, technology, raw materials, etc. They also do not have as much access to policy-makers as larger enterprises have. Effective 'clusterisation' can help them to overcome some of their limitations of small size and informality. They can share resources in their clusters, which they could not afford alone. As strong 'clusters' (or associations, or networks) they can have more clout in supply chains and with policy-makers too.

Thus ‘clusters’ provide an intermediate level in the escalator of enterprises, between small and informal enterprises and large, formal enterprises. The weaknesses of clusters in India explains the ‘missing middle’ in India’s industrial pyramid that economists have pointed to.

More policy attention should be directed to accelerate the formation of stronger clusters and networks of small enterprises, rather than schemes directed towards assisting individual enterprises. The clusters should become more ‘organized’ and more ‘formal’ for the small enterprises to connect more easily with the formal system, rather than forcing excessive formality onto small enterprises.

The excessive informality of the Indian economy is often cited as the reason for the slow growth of larger and more productive enterprises. Therefore, there is a thrust towards compelling small, informal enterprises to formalize. Formalization of small enterprises will, no doubt, enable them to more easily obtain the resources that the formal system is set up to provide, such as finance, markets, and supplies. However, formalization comes with costs, and it also requires capabilities that small enterprises often do not have. Therefore, it should be no surprise that many enterprises choose to stay small and informal. The trade-offs for small enterprises between the costs of formalization and the benefits of formalization must be understood and intelligent ways devised for enabling small enterprises to connect with formal systems (of finance, marketing, purchase of inputs, etc.) to prevent formalization harming them rather than benefiting them.

Clusters, as mentioned before, are an intermediary mechanism to enable informal enterprises to plug into formal systems. In addition, all requirements of formality that may benefit small enterprises, such as the formality required to obtain finance, should be simplified to make it easier for small enterprises to connect with the formal system. Technology can provide solutions for making more efficient connections. However, the implications for small enterprises of connecting with the formal system and the costs associated with it must be understood too (such as with GST and ‘demonetisation’). Enterprises should be enabled to move up through shades of formality, rather than a black-and-white formal/informal distinction, as they grow and acquire more capabilities.

The development of capabilities of enterprises and the development of skills of workers cannot be put into separate, insufficiently connected policy silos. People need skills because they want jobs. And the skills they need must fit the jobs they do, and often, as mentioned before, can be honed only on the job. Therefore, successful programs to develop skills cannot be managed within a ministry dedicated to labor or skills. This approach, wherein industrial training institutes were under the Labor Ministry (and may now be transferred to the Skills Ministry), resulted in the mismatch between the output of the skills programs and requirements of industry, and trainees finding that they could not get jobs.

On the other hand, enterprises complain to the Industrial Development department that they cannot grow because they do not have people with the requisite skills. Therefore, the policies for enterprise growth and job creation must be closely tied to policies for developing skills in the economy. A Skills Policy and an Enterprise Policy must mesh.

### 3. SOME KEY ISSUES FOR AN ENTERPRISE POLICY

- Promotion of formal clusters/networks/platforms
- Adapting processes of ‘formalization’ of enterprises to enable small enterprises to retain flexibility
- Incentives linked to time rather than size (to provide incentives to learn and acquire capabilities faster)
- XXXX
- XXXX

### 4. SOME KEY ISSUES FOR A SKILLS POLICY

- Just-in-time, needs-aligned, modular skills programs
- Participation of employers in skills development
- Apprenticeship programs
- High quality ‘staffing’ firms
- XXXX
- XXXX

**N.B. Some issues, it may be noticed, appear in more than one policy area, e.g. policies to give more thrust to apprenticeships which appear in both Labor and Skills. This illustrates the necessity for alignment of policies, in a ‘whole of government’ approach for a stronger thrust to strategies required for faster creation of jobs and livelihoods.**

#### E. Free Trade tangles (and Trade Policy—sub-system 6)

Theoretically, free trade will benefit everyone in the long run. If every country were to produce only what it can produce better than everyone else, and buy from others what they can produce better, everyone will benefit. Also, global economic productivity will improve because all resources are being used where they are most productive. The problem is, how to get from here to there, when presently countries are continuing to produce what others can produce better. Industries within these countries must shrink, and workers should look for employment in other industries in which the country has a competitive advantage. Thus, there will have to be a huge amount of shuffling around of incomes within countries and between countries too. (Economist Dani Rodrik had estimated that about \$7 of incomes will have to be shuffled around to produce an overall gain of \$1 in global output.) Politicians must manage the messy shuffling around that theoretical economics demands.

Another problem with an abstract view of free trade is that competitive advantages are not static, except perhaps for pure commodities. Industrialization is a process of adding value to commodities. As mentioned before, industrialization is a process of enterprises in countries learning capabilities they did not have before. Thus, in a continuously industrializing world, competitive advantages will change. And trade management becomes a game of preserving competitive advantage, and retarding others acquiring competitive capabilities. When monopolies of natural resources are not, or no longer with industrially advanced countries, they will try and preserve monopolies of intellectual property to retain their competitive advantage.

An effective way of preventing enterprises in developing countries from acquiring competitive capabilities is to prevent their governments from nurturing their weaker industries, by raising the

bogies of ‘protectionism’ and interference with (supposedly) ‘free trade’. As mentioned before, every country that has industrialized effectively, including both the US and China, has protected its industries and interfered with free trade when it was growing its industrial capabilities.

Free trade, especially the freedom to import what the country is not yet able to produce at competitive cost and quality, is a boon to consumers in the country. Therefore, citizens will support free trade when they are able to buy products they felt deprived of earlier. However, citizens are not merely consumers. They are (or should be) producers too so that they can earn incomes to buy the goods available. And if free trade deprives them of jobs and reduces their incomes, they will, perhaps quite rationally, support protectionist measures.

Going from here to there, from less free to more free trade, involves the reduction of import duties, generally in steps. In any developing economy, assemblers of finished products are more numerous and larger than producers of components, who are in turn larger than producers of capital goods and machinery in the country. Thus, final producers and sellers to the public have greater political clout than producers of machinery. As the economy grows, with loosening of regulations of industry and the liberalization of trade, the businesses of assemblers grow faster. They plead for more freedom to import components at low cost so that they can supply finished products of better quality at lower costs to citizens. Producers of components, in turn, plead for freedom to import machines at low cost, even second-hand machines, so that they can reduce their own costs. Thus, inverted duty structures come about, with higher duties on finished products and lower duties on capital goods, with the rationale that consumers benefit. However, the country’s depth of industrial capability is reduced, with consequences for future competitiveness of industry and future growth of jobs.

A subject acquiring prominence in trade policy discussions and negotiations is the use of the exchange rate as a trade policy tool. Without doubt, the exchange rate is a powerful determinant of the competitiveness of any country’s exports. It provides exporters in developing countries with a simple, compensatory mechanism for overcoming the costs they incur because of poorer institutions and infrastructure in their own country. Not surprisingly, when a developing country seizes foreign markets, its competitors will complain that its currency is under-valued for its established competitiveness. Thus, when Japanese industries were sweeping through global markets in the 1980s, Japan was forced in the Plaza Accord to substantially increase the value of the yen. Now, with Chinese manufacturers sweeping through global markets, there are protestations about the yuan being undervalued. Advocates of free trade argue that the exchange rate must never be used to tilt the competitive position in favor of domestic producers. India must take a practical, and non-ideological view about what will serve its interests best, and what its exchange rate policy should be.

Free-flowing trade within the country is another critical area that deserves importance while policy planning. There is a need to unshackle movement of resources (labour, capital and resources) and there is a need to create strong value chains within the country to optimise costs in movement of goods-in-production (raw materials and intermediate goods) and finished products within and outside. While some reforms have already been initiated, there is a need to sustain and broaden the momentum.

The point to be made, once again, is that policy-makers must see the whole system to understand the consequences of policies that may be good for one part of the system on other parts of the system, now as well as in the future.

## 5. SOME KEY ISSUES FOR A TRADE POLICY

- Exchange rate policy
- Inverted duty structures
- Export promotion
- Intellectual Property
- Public procurement
- Incentives to 'buy local'
- XXXX
- XXXX

### F. The Janus face of technology: destructive and generative (and Technology Policy—sub-system 7)

Rapid advances in information technologies are changing the shapes of production and service systems, and entire industries too. There is concern that the emergence of a new pattern of industry—'Industry 4.0'—will change the shapes of enterprises and jobs very radically. Not only will people not have the requisite skills, but the total numbers of jobs will be less, when there are already concerns about 'jobless growth'.

Concerns with disruptive impacts of new technologies are being met with the counter that there were always alarms whenever new technologies were introduced, but it always worked out alright in the end. And so it has, except that the transitions took many years, even decades, during which time movements of people from one industry to another and from place to another, and the disruptions of incomes and lives during the transitions did create societal stress. New institutions, such as labor unions, grew to protect the interests of workers in industries. New legislations were fought for. The management of the transitions generally was a contentious socio-political process and it is likely that the advance of Industry 4.0 will be also.

Previous waves of new technologies affected one sector at a time. The mechanization of farms in the US, and application of new chemicals, increased productivity of US agriculture greatly. It also displaced many people from their work and sources of income. They moved into growing industries—textiles, garments, furniture, shoes, etc.—in urban centers. When the productivity of factories was improved with more automation, and jobs in manufacturing were reduced, people moved to service industries which were growing—into low skills jobs in retail and hospitality and into professional jobs in financial services, consulting services, etc. Industry 4.0 is different. Because it can replace human effort in all sectors simultaneously—in industry, in services, and in the knowledge sector too.

The question is: what will human beings do in the future? And how will they earn to pay for the goods and services that machines will produce for them? In an economy run by machines for the owners of the machines, what will human beings be doing? The idea of a Universal Basic Income has appeared as a compensation for the decline in incomes with an inadequacy of jobs and wages in the economy. Along with determination of the amount of the universal income that will be adequate for those with no other sources of income, other ideologically and politically contentious issues must be resolved. One of which is, where will the money to pay the universal basic incomes come from, if not by heavily taxing those few who will have sources of adequate incomes in the extreme scenario of Industry 4.0, i.e. where only the owners of the capital invested in the machines and automation (and their financial managers) will have adequate incomes.

In contrast with this destructive view of new technologies, there is another view, of information technologies as enablers of modular, and more accessible, learning systems; of technology as a facilitator for formation of networks and clusters; and technology enabling citizens and tiny enterprises to access finance and markets more easily. Thus, technology as an enabler should increase the participation of more people and the formation of more enterprises in the economy. And more people should be able to convert their physical and mental efforts into incomes and, progressively into capital too.

Which will move faster? The destructive side of new technologies, or their generative side? It depends: on the policies that governments apply and the choices that entrepreneurs make.

There is a view that technology must not be regulated because regulations will curb innovation. However, every powerful new technology has been regulated to ensure that it will not harm society, while obtaining its benefits: electricity, nuclear technology, chemicals, even pharmaceuticals. Now the need to regulate social media seems to be exercising people everywhere. A policy for regulating applications of technology ('Industry 4.0 and other automation technologies) must be a critical policy within a suite of policies that should compose an 'Industrial Policy' with the aim of creating more livelihoods and jobs.

<b>6. SOME KEY ISSUES FOR A TECHNOLOGY POLICY</b>
<ul style="list-style-type: none"> <li>• No incentives attributable to capital invested in automation</li> <li>• Deploy technology to increase small enterprises' reach to inputs (finance, training, procurement, etc.) and to markets</li> <li>• Joint ventures (technology transfer)</li> <li>• Promote more and better R&amp;D</li> <li>• Skill development (as social security)</li> <li>• XXXX</li> <li>• XXXX</li> </ul>

**N.B. It will be noticed that several issues that appear in Technology Policy have appeared elsewhere too e.g. skill development and joint ventures (technology transfer). Once again, this highlights the need for a 'whole of government' approach to align forces within the economy.**

**G. Regulation and Competition (and Competition and Regulation Policy—sub-system 8)**  
 Governance of an ecosystem of enterprises requires the balancing of good regulation of enterprises (to ensure they conform with the requirements of the economy and society), with sufficient freedom for enterprises to form, learn, innovate, and grow. Enterprises cannot be left completely free because they may deliberately, or inadvertently, harm 'the commons'. On the other hand, they can be stifled by excessive or bad regulations.

The tension between the demand to lay down the rules and to put in safe-guards a priori, and the need to also provide freedom to enterprises to experiment and learn, plays out in approaches to regulation of enterprises. It is better to know the rules of the game beforehand. However, the rules should not be so detailed that they stifle enterprise, leaving little scope for innovation. Far better maybe to have only a minimal set of critical rules in place ex ante, and then keep a close eye on

the behavior of the system, and intercede ex-post if necessary. Indeed, this is the approach of ‘competition management’, the modern approach to regulating behaviors of enterprises.

A clutter of regulatory institutions with overlapping mandates has grown in the Indian economy. The process of industrial and economic growth, as mentioned before, is a process of learning and evolution. Learning can be improved and evolution expedited by periodical, dispassionate, appraisals of the ‘state of the system’. The time has come to review the regulatory framework of Indian industry.

## **7. SOME KEY ISSUES FOR A COMPETITION & REGULATION POLICY**

- National competition and regulation framework
- Systematic Regulatory Impact Assessment/Competition Impact Assessment
- Institutions for Standards/Certification
- XXXX
- XXXX

## **PROCESS OF DEVELOPING A DYNAMIC INDUSTRIAL POLICY: OPEN MINDED LISTENING AND A SYSTEMS APPROACH**

### **Open Mind Listening**

The tension between control and freedom also plays out in the design of an Industrial Policy. Industrial planners are expected to direct enterprises towards the aims of the plan. However, in their desire to align energies and resources of enterprises, they may control too much.

India’s approach to industrial planning, prior to the reforms of the 1990s, controlled enterprises too much. There was an understandable desire to allocate resources most efficiently towards industrial development goals. Planners selected priority sectors, determined what capacities were required, down to sub-sectoral levels, and authorized enterprises to produce and sell according to the plan. The process was, conceptually, efficient. However, what industries could do was limited by the model of the economy in the minds of the planners. Whereas, the economy was changing. So, the planners’ model was becoming misaligned with reality. And innovation was curbed.

India shut down the old industrial planning machinery in 1991. However, the fault in the approach to planning for an uncertain future—relying too much on prediction and prescription—appears again whenever a forward plan is to be made.

The predilection of forward planners everywhere is to begin with a prediction of the future. Planners want more detailed predictions so that more precise plans can be made. This approach is evident in estimates being made by many expert agencies these days of the numbers of jobs there will be in various industries in the future, so that government agencies can allocate resources and enterprises can make their plans accordingly. Predictions are made whenever priority sectors and sub-sectors are selected (and their relative sizes in the future forecasted) to guide industrial development. However, committing to precise plans based on a prediction of the future is a risky approach to planning when the world is changing dynamically, with innovations in technologies and in business models, and with changing boundaries of industries and sectors.

A different approach to planning forward is required for a dynamically changing environment. Better to have a compass than a faulty map. Instead of attempting to make a detailed map, it is better to start out with a rough systems' map and to systematically listen for signals in the environment that suggest whether changes in direction are required. Therefore, a sound process for open-mindedly listening to signals must be put in place.

### **Systems Learning Approach**

The only sustainable source of competitive advantage for an enterprise (or country) in a dynamic world, is its ability to learn and change faster than any potential competition. The process by which China has developed rapidly and successfully can be described in Deng Xiao Peng's memorable statement. "We shall cross the stream by feeling the stones underfoot". Enterprises in the country must develop new capabilities to do what they were not able to do before and in a changing environment. They must 'feel their way forward', like the feet underwater. The role of policy-makers is to enable them to move more surely and faster too. Therefore, policy-makers (the brain in the head above the water) must move the weight of the system to keep the body in balance as it moves forward. It must receive signals from the feet quickly and accurately and adjust policies, and the weight of the body, accordingly.

This description of 'a system learning in action' highlights the critical role of the communication process between enterprises, other stakeholders in industrial development, and policy-makers. Japan's remarkably successful industrialization after the Second World War is attributed to the very good coordination amongst industry and the various arms of government, facilitated by MITI. Korea's success is attributed to the tight coordination between the chaebol and government, and Singapore's to the alignment between enterprises and the government. Germany's ongoing success as an industrial power house, despite high wages and a strong currency, is due to the cooperation amongst stakeholders—industry associations, unions, and the government.

The structure of the consultation process must suit the political economy of the country. What worked in Korea does not work in Germany. However, whatever the structure, the quality of listening amongst the participants, and the ability to arrive at agreements, whether by dictat or by democratic deliberations, will determine whether the body will move across the stream fast or repeatedly stumble.

Industrial policy-making must be a 'whole of government' process. It requires the optimization of many critical sub-systems, and in harmony, as mentioned before. It must also be a continuing learning process in which stakeholders participate. Good quality associations of industry and other stakeholders are required for the productivity of the consultations. They must be able to represent the insights from stakeholders accurately. And they must be able also to consider the interests of the whole system, and not merely lobby for their own interests.

The Total Quality Management mantra is: the quality of the process determines the quality of the outcome. Therefore, whether India's new industrial policy will produce sustainable growth of competitive enterprises along with more jobs and livelihoods, will depend heavily on the quality of the process of producing and implementing the new industrial policy.

### **THE POLICY 'DOCUMENT'**

An Industrial Policy is expected to be the guide for actions by many actors in government and outside it that will enable the country to produce the outcomes it expects from the policy.

A concern that often comes up (and indeed it did when the National Manufacturing Policy was made in India in 2012) is in how much detail should the policy be written. One view is that, unless the policy specifies in sufficient detail what is required to be done by various actors, it will remain as a set of lofty intentions. The other view is, the policy is not supposed to prescribe the plan for any of the actors. Indeed, a ‘policy’ should not even be mistaken as a ‘plan’ for the whole system.

An Industrial Policy designed to accelerate creation of more enterprises, jobs, and livelihoods, and to change the trajectory of ‘jobless high growth’ of the Indian economy, will require systemic changes in the economy. Many ‘theories-in-use’ may have to be changed while framing many policies.

Eight subjects are highlighted in this note in which present approaches should be reviewed and policies must be framed/reframed:

1. Investment
2. Labor
3. Skills
4. Enterprises (especially small ones) and clusters
5. Trade
6. Technology
7. Competition and Regulation

These will be undertakings of many ministries and agencies. Policies in these areas will assist the preparation of sectoral plans, which will also be prepared by several ministries/departments.

Many stakeholders will have to take actions that will produce the outcomes of the policy. The policy should become a useful guide for them, persuading them to act in accordance with the policy. Therefore, the policy document must present a compelling logic for all stakeholders so they align their actions towards the outcome they all want.

The Industrial Policy must explain the principles that must be adhered to so that the national goal of faster growth of jobs and livelihoods with the growth of competitive enterprises in many sectors can be reached. The policy must state clearly what should be done, and what should not be done, and what will be encouraged within the system and what will be discouraged, so that the policy can produce the outcomes required. It must not be prescriptive in its details. Policies for sub-systems will be developed by others who will go into further details required.

Finally, industrial policy, by its very nature, must be a process of learning forward—progressing by feeling the stones underfoot. Therefore, the policy must describe the process that will be used for reviews with stakeholders, obtaining feedback, and adjusting the policy whenever required. Without this process in place, the policy document will remain a document without life.

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