

The future of work in Asia

How can India create livelihoods in the digital age?



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March 2017

- Every month, more than one million job seekers enter India's labour market. However, despite being an investors' darling, India's employment generation track record has been disappointing.
- In the medium term, the revolt against globalisation threatens the access to Western export markets. Converging manufacturing costs work to discourage offshoring, while ever faster consumer product markets encourage the reshoring of production closer to the home market. The global window for export- and manufacturing- led development is hence closing.
- Where will the jobs of tomorrow be created? Can India leapfrog into a service-led economy? Will the green economy keep its promise to create green jobs? Can the blue economy boost employment in coastal areas? How can the millions toiling in the care economy be better remunerated?
- Creating a human economy is more than a technical task. To move up the global value chain, major investment into human capital is needed. To generate the necessary resources for the provision of full capabilities, a social democratic compromise is needed which lays the social foundation for solidarity between all members of society.

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The global window for export- and manufacturing- led development is closing

In order to put the shift in global opportunity structures for development into perspective, it is necessary to identify the mega trends which have transformed capitalism over the last decades. To offer plausible prognoses on which of these trends will prevail, reverse or accelerate, it is crucial to trace back their origin to the structural crisis of the global capital accumulation system.

Ever since the Second Industrial Revolution started to peter out in the 1960s, global capitalism has faced a crisis of profitability. At its core, capitalism has a demand problem: for decades, consumption demand has been growing slower than the increase in productivity. Unable to address the root cause of this crisis, the history of the past decades has been a series of firefighting measures designed to artificially create demand. The inflation of the 1970s, the public debt of the 1980s, the private debt of the 1990s and the quantitative easing of the 2000s were all strategies to inject future resources for consumption at present.¹ Of course, all of these temporary fixes necessarily led to new major crises. However, as Wolfgang Streeck pointed out, they were never intended to address the root cause of the crisis, only to buy enough time to “repair capitalism”.

The strategies put into place to tackle the root causes also form the trends transforming global capitalism:

1. the **rationalisation** of production through technological automation aimed at increasing efficiency; more recently the digital revolution as the latest attempt to tackle the consumption crisis by rationalising the consumptive and distributive apparatus.²
2. the **globalisation** of production by offshoring, profiting from cheap labour cost in developing economies;
3. the **neoliberal** approach to free the supply side from any “political cost,” such as by lowering taxes, cutting back welfare and depressing wages;
4. **financialisation** as a strategy to sidestep the crisis by looking for profits in the financial markets;

Ironically, instead of tackling the underlying crisis of demand, these strategies largely aimed at the supply side. It is therefore not surprising that none of them succeeded in resolving the underlying demand crisis. On the contrary, by fuelling un- and under-employment in the old industrial countries, automation and deindustrialisation have contributed to the crisis. The new wave of digital automation of middle class jobs may equally backfire, when digital disruption deprives even more people of the disposable income free for consumption³.

Which of these global trends will reverse, continue or accelerate?

Technologically speaking, the digital revolution is just taking off. Artificial Intelligence, robots, smart grids and 3D printers will revolutionise the way we live, work and commute. Digital utopists believe these new technologies have the potential to cure diseases, mitigate climate change, and democratise energy and production. Digital dystopists fear that digital automation will create mass unemployment, pulverise the middle classes, erode democracy and pave the way for a global totalitarian regime. In terms of employment, optimists see excellent opportunities for high-skilled work. With regard to low-skilled workers, the prognosis varies starkly, depending on the assumption if the loss of unskilled jobs will be compensated by new tasks and jobs or not⁴. Either way, venture capitalists and politicians are determined to put all their hopes on the Fourth Industrial Revolution. Despite the significant contribution of automation to non-employment⁵, most of the



public anger focuses on globalisation and trade. Political and economic decision makers see rising productivity as the only way to survive the breakneck global competition. In the absence of political pushback, technological rationalisation is bound to accelerate.

Higher productivity means that less workers can produce the same output, leading to the need to cut jobs. Already today, factories are populated with robots. In the factories of tomorrow, a few hundred workers will be enough to produce the same output where tens of thousands would have been needed before. The jury is still out if the history of prior industrial revolutions repeats itself, and the loss of jobs will be compensated by new jobs. Henning Kagermann argues that the employee of the future will no longer be a machine operator, but an experienced expert, decision-maker and coordinator⁶. Rather than low skilled work disappearing, the level of qualification rises steadily⁷. Others argue that automation will hit middle range skilled jobs, while new forms low skilled tasks will emerge in the digital economy⁸. However, it seems reasonable to assume that at least in economies with high labour cost, the times when the manufacturing sector created mass employment are over⁹.

Digital automation has also started to replace workers in the service sector. So far, the flexible and decentralised nature of many low-skill service jobs made them relatively resistant to automation. Frey and Osborne, however, believe that this resistance to rationalisation may end in the current wave of digital automation.¹⁰ Major breakthrough in big data, sensors and intuitive programming allow machines to take over tasks that seemed to be off limits only a short time ago. Plummeting costs of robotics

make these machines increasingly competitive with human labour.¹¹ As Brynjolfsson and McAfee point out, contrary to common belief, it is not necessarily the manual jobs which are the most easily automated.¹² Billions of years of evolution have equipped humans with a sophisticated motoric apparatus, while our cognitive abilities are not as impressive as we like to believe. Consequently, in this second wave of automation, it is rather the cognitive jobs than the manual ones, which are being automated. Put bluntly, it is easier to replace a tax clerk with a robot than a cleaning maid. Artificially intelligent robots could replace service sector employees with highly repetitive tasks like tax consultants, travel agents, legal clerks or call service providers. Digital platforms aim at disrupting service industries from pharmacies to logistics and retailers. Again, some observers have warned that the potential for automation cannot simply be equated with job losses¹³. However, even if new tasks and jobs arise, and jobs develop dynamically, digital automation may also limit the ability to create employment in the service sector.

While digital automation is accelerating, globalisation seems to be going into reverse. In 2016, global trade has been growing slower than global GDP, the first time since 2001 and only the second time since 1982¹⁴. The global capital flow collapsed as a share of global GDP in the wake of the global financial crisis, and it is not recovering.¹⁵ Some have even argued that we see the beginning of the disintegration of global supply chains¹⁶. Many factors, from geopolitical risks to the fall-out of the financial crisis, contribute to this de-globalisation trend. In the long run, digital automation may be the most decisive factor.

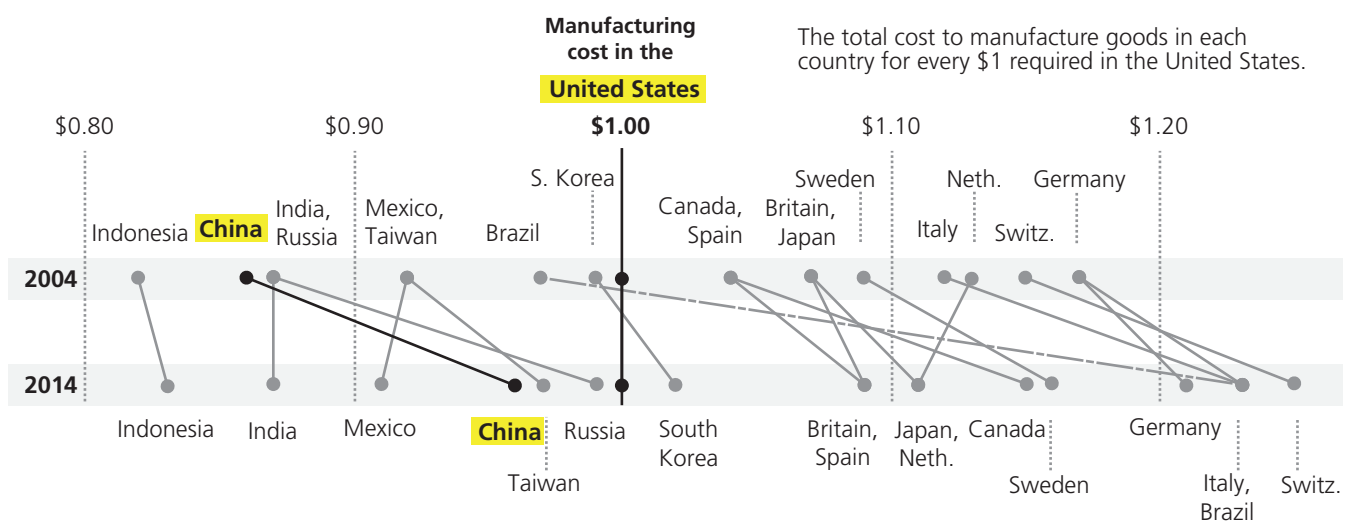
While labour costs are rising in many emerging economies, digital automation is increasing productivity in the old industrial countries. The total manufacturing cost in some emerging economies are approaching those of the United States (Graph 1)¹⁷. All things considered, manufacturing in the United States is only 5% more expensive than in China.¹⁸ The combination of higher energy efficiency and the tumbling labour cost makes manufacturing in the old industrialised countries competitive again. The shrinking differential between total manufacturing cost in developed and emerging economies erodes the incentives for offshoring, one of the major drivers of globalisation over the last decades.

The de-globalisation trend is accelerated by the need to react quicker and more flexibly to the demands of consumers. In the clothing and garment industries, fashion circles are getting increasingly shorter. Hence, long shipping times are the Achilles heel of fast-moving consumer markets. Accordingly, the time it takes to ship from factory to shelf will increasingly rival labour cost as the main motivator in inventor's calculus. Consequently, multinational companies like Walmart, Ford and Boeing, as well as small- and

medium-size companies, have started to reshore production facilities back to their parent countries. The Reshoring Initiative, a non-profit organisation, estimates that 260,000 jobs have been created in the United States because of this shift.¹⁹

This reshoring trend could be accelerated by the revolt against globalisation in the West, and the political need to respond to calls to "bring back jobs". The rage of the losers of globalisation is hardly irrational. Decades of secular stagnation and jobless growth have depressed real wages and living standards, and condemned millions to underemployment and debt.²⁰ Garnished with racist vitriol and nationalistic hyperbole, right-wing populists have proven that the message 'globalisation has not worked for us' can win majorities. With the promise that the 'free movement of goods, people and ideas will benefit all' losing credibility among voters, politicians across the political spectrum will be tempted to play with the protectionist toolbox. The United States and the United Kingdom seem determined to re-negotiate existing trade agreements. Other countries may also go down this road.

Graph 1



The New York Times | Source: Boston Consulting Group



While the neoliberal cost-cutting paradigm is still perceived by many decision makers as “without alternative”, public resentment against austerity is mounting. The election of Donald Trump as the US President is a watershed moment. American voters have entrusted their fate in a candidate who has vowed to lay the axe at the foundations of the liberal world order. The political battle over the new paradigm is still raging, and it is far from clear what will replace the current order. Still, it seems that neoliberalism has passed its peak, and may soon begin to reverse.

Financialisation, in times of low profitability in the “real economy,” continues to be attractive for capital looking for profitable investments. In the aftermath of the 2008 financial crisis, political decision makers have refrained from any meaningful regulation of the financial markets. This free pass may change in case of another financial meltdown. Until then, the financialisation trend is likely to continue unabated. In the context of digitalisation, this hyper-capitalism is turning Venture Capital into a weapon for disruptive competition over market shares. Many of the start-ups and platforms boosted by this abundance of capital have yet to prove the viability of their business model.

The race for development in Asia

What are the implications of these trends for the future of work in Asia? Most of Asia’s emerging economies have followed the export- and manufacturing-led development model. Taking advantage of its abundance of cheap labour, East Asia’s flying geese have moved from agriculture to light manufacturing to full industrialisation. Against the background of de-globalisation and digital automation, however, what worked so spectacularly well in East Asia may no longer work for late industrialisers.

First, the global window of opportunity for export-led growth seems to be closing. The United States has already withdrawn from the Trans-Pacific Partnership. Given the dark political clouds on the horizon, it can no longer be taken for granted that Western markets will stay open for Asian exports. Prudently, Asian population giants like China and India have already begun to reorient their development models towards their domestic markets. Smaller countries like Malaysia or South Korea are looking to their bigger neighbours. For geopolitical reasons, China may indeed be willing to found a regional trade regime around its Regional Comprehensive Economic Partnership. However, given the need to absorb its own excess capacities, it is unclear if China would be willing to replace the United States as the “buyer of last resort”. Asia’s emerging economies would, therefore, be wise to rethink their export orientation.

Second, digital automation is eroding the comparative advantage of cheap labour. In a number of Asian countries, most notably China, wages are rising (Graph 2 and 3²¹). This is particularly significant in those countries which have already passed the Lewis turning point, and the reserve army of cheap labour in the agricultural sector has dried up, as well as in ageing societies where the total labour pool is shrinking²². For instance, in China, hourly wages increased on average by 12% annually over the last decade²³. Some of this cost has been offset by rising labour productivity²⁴. As the competitive advantage of cheap labour cost erodes, notorious headaches such as quality, workforce skills, shipping lanes, local corruption and political interference may further weaken international investors’ appetite for foreign adventures.

At least in emerging economies with rising wages like China, if not the total numbers, then the composition of foreign direct investment is shifting from manufacturing to financial services. Accordingly, open manufacturing positions in China have been dropping consistently since

2012, indicating that job creation in the manufacturing sector is slowing shrinking.²⁵ This means in countries where labour cost are reaching upper middle income levels, we may be seeing the beginning of the reverse of the offshoring trend already. On the other hand, economies with lower and stagnating manufacturing costs like India may stand to benefit from the shift in production facilities²⁶.

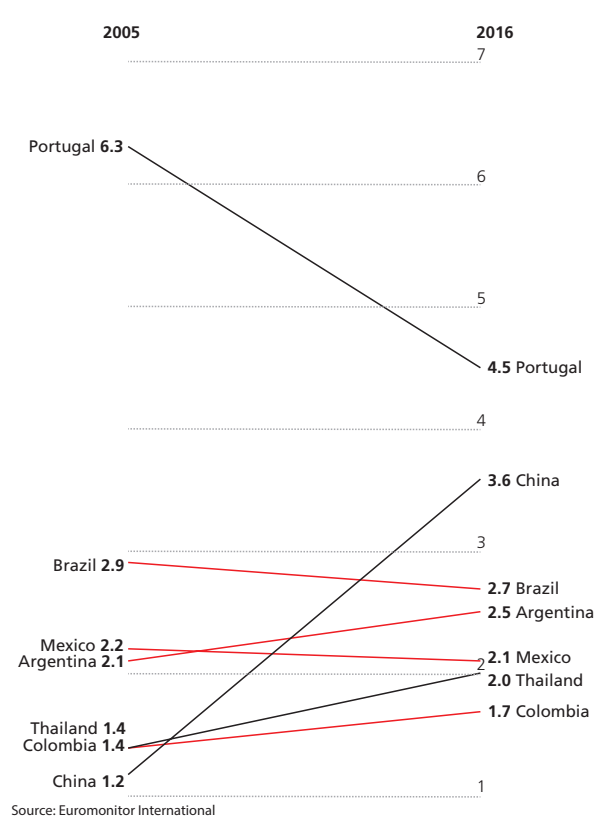
Third, digital automation may lead to jobless growth. Already today, many Asian factories and workshops are automated. In the future, artificially intelligent robots will not only populate Asian manufacturing, but start to replace workers in all sectors. A World Bank study estimates that the proportion of jobs threatened by automation is 77% in China²⁷. The ILO estimates that 56% of jobs are at risk of being automated in the ASEAN-5 countries²⁸. The difference in labour cost, however, makes it unlikely that low-skilled service workers in

emerging economies are being replaced with machines anytime soon. The pressure to automate may also be lesser in sectors which are not subject to international competition, but embedded in the domestic market. Still, in some Asian economies, the spectre of jobless growth is looming large. This is particularly worrying for countries with growing populations. In Indonesia, where the number of adults over 15 years increased by 3.1 million between 2014 and 2015, only 200,000 jobs have been created in the same period.²⁹ In India, where more than one million job seekers enter the labour market every month, employment generation in eight sectors slowed to a seven-year low in 2015³⁰. Between 1991 and 2013, the economy could absorb less than half the new entrants into the labour market. While the size of the “working age” population increased by 300 million, the Indian economy could employ only 140 million, suggesting a limited capacity to generate jobs.³¹

Graph 2

Charging China, lousy Latam

Manufacturing wages per hour (\$), constant prices

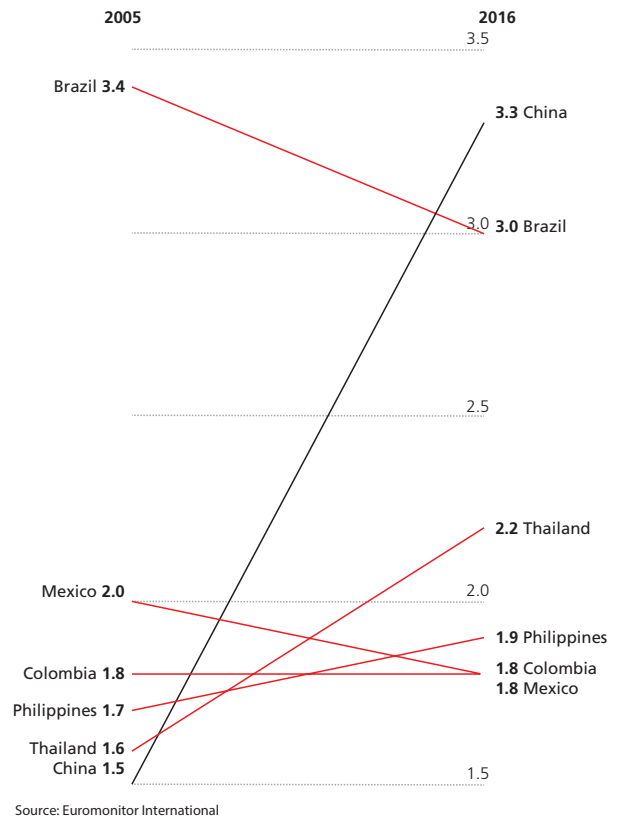


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Graph 3

Wages per hour across all sectors

Constant prices (\$)



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Fourth, global trends may increase the risk for premature deindustrialisation. Dani Rodrik observed that in a globalised market, manufacturing moves on as soon as wages start to rise, leading to premature deindustrialisation in newly industrialising economies.³² By the time manufacturing in South Korea accounted for its highest proportion in jobs, incomes were around \$12,700. In India, factory employment started to decline as a share of employment when income was around \$3,300.³³ This trend is accelerated by financialisation, which encourages roaming hot money in pursuit of quick profits over long-term investments, increasing the risk for financial crises and external shocks.

Finally, digital automation changes the quality of employment generated. A survey of employers in major industries in ASEAN countries showed that the demand for high-skilled workers far outgrows the supply.³⁴ Following the pattern in industrialised countries, the need for low-skilled workers dwindles. In a comprehensive study on the future of work in ASEAN countries, the ILO has looked into the impact of digital automation on the five major employment-generating sectors. New technologies like robotic automation, Internet of Things, 3D printing, sewbots, cloud computing and software robots are changing the skill set required from workers. The assessment looks very similar to the impact of digital automation in other regions of the world: while new high-skilled jobs are created to work with machines, low-skilled labour is increasingly being replaced. Engineers and technical experts are needed in the automotive, electronics and textile industries. Highly educated employees with certificates in medicine, business, law, and data analysis have good chances in business process outsourcing. Employees in the retail sector will need skills in data management, digital marketing and social media.

These expectations, however, rest on the assumption that Asia still has a future in manufacturing.³⁵ The erosion of cheap labour's comparative advantage, and the ability to

produce better quality closer to home markets, however, suggest otherwise. Again, it would be premature to assume that digital automation will not create new tasks and jobs in manufacturing. Upskilling and hyperspecialisation promise new forms of work, while badly resourced SMEs, domestic market oriented manufacturers as well as niche market enterprises may choose to forego automation altogether. All things considered, however, it seems less likely that manufacturing will play the same role in absorbing the surplus labour of the agricultural sector as it did in the industrialization of East Asia.

With manufacturing on the way out, and given the chronic labour surplus in the agricultural sector, all hopes are on the service sector as the next big job generator. Keeping the automation of white collar jobs in mind, the emerging global market for digital services offers opportunities for high-skilled labour in Asia. Major industry leaders have invested in crowdsourcing platforms, which allow outsourcing of tasks globally³⁶. By putting in place the infrastructure for a global division of labour in real time, the digital revolution allows high-skilled workers in Asia to compete individually with their peers in the OECD countries. Anesh Anesh sees opportunities in research and development of software, engineering and design, animation, geographic information systems, processing of insurance claims, accounting, data entry and conversion, transcription and translation services, interactive customer services, finance and credit analysis, market analysis, archive administration and website development and maintenance.³⁷ What is different from the call centres of today is that these jobs require higher skills. Importantly, these "digital jobs" are not restricted to the IT sector, but arise across the entire spectrum of the service sector.

In sum, with the global window for export-led, manufacturing-led development closing,³⁸ the quest for development has turned into a gigantic race against time.

How can India create employment?

According to estimates, by 2050, at least 280 million more people will enter the job market in India³⁹. Creating sufficient employment to meet this demand is a huge challenge. However, even in a benign global environment of low oil prices, leaving room for public spending on infrastructure as well as consumption demand, India's track record in job creation has been disappointing.⁴⁰ In fact, despite being an international investors' darling, India loses 550 jobs per day.⁴¹

With its abundance of cheap labour, India is still in a strong position to compete for labour-intensive low skill manufacturing vacated by China⁴². In fact, the government is literally betting the farm on it, hoping that a surging manufacturing sector could absorb surplus labour from a notoriously unproductive agricultural sector. The ambitious "Make in India" program aims to increase the GDP share of manufacturing from today 12% to 25% by 2022, hoping to provide employment for 100 million people⁴³. Chief Economic Advisor Arvind Subramanian has pointed out that in order to achieve this, India would have to reverse the long-standing trend of premature deindustrialisation⁴⁴. In labour intensive industries, global investors' search for the cheapest deal means production facilities are shifted as soon as wages start to rise. Breakneck international competition will increase the pressure to automate. India's shiny automobile or smartphone factories are already populated with robots. India's manufacturers are ready to take the next step in automation⁴⁵. This does not bode well for the ability to create mass employment in the formal manufacturing sector.

With digital automation set to accelerate, the spectre of jobless growth looms large at the horizon. The World Bank gloomily predicts that across all sectors, a whopping 69% of jobs in India could potentially be automated⁴⁶.

What will happen if the aspirations of these internal migrants remain unmet and frustrations rise⁴⁷? Addressing these worries, Indian President Pranab Mukherjee attributed this slow employment generation to machines fast replacing men, and called for a paradigm shift⁴⁸.

With the traditional route to development closed, the search for alternative development models is in full swing. Former central banker Raghuram Rajan warned against an export and manufacturing led model, and advocated to focus on the domestic market instead as an answer to the expected slowdown in global trade⁴⁹. Indeed, with a population of 1,25 billion, and a rapidly growing middle class, India has one of the biggest domestic markets in the world. Domestic consumption demand, however, depends on rising incomes for workers and employees. In a jobless growth scenario, a domestic demand-led strategy would face severe limitations in a low-income country. An inward focus also poses the risk of weaker incentives for technological innovation.

Some have pointed out that the bulk of Indian workers is still in the agricultural sector. However, the need to increase productivity in the agricultural sector - and with e-farming already on its way - would only accelerate the freeing up of surplus labour, and increase the migration pressure on the urban centres already bursting at the seams. On the other hand, the emergence of ethics and health conscious young urban middle class consumers offers opportunities for organic farming, local products, and even urban farming. Producing high quality agricultural products for this niche market can be a source of decent jobs for agricultural workers.

Green growth offers new opportunities for development.⁵⁰ The International Renewable Energy Agency estimates that renewable energy employed 8.1 million people around the world in 2015.⁵¹ In India, reaching the government's goal of 100 GW through photovoltaic source by



2022 could generate 1.1 million jobs in construction, project commissioning and design, business development, and operations and maintenance⁵². With its domestic focus, the construction industry seems to be better shielded against international competition than others. Enormous potential to create clean jobs also lies in energy efficiency.

Will the blue economy create jobs in coastal areas? Bangladesh hopes to jumpstart fishing, blue water farming, the harvesting of offshore mineral resources, boost pharmaceutical and cosmetic industries, and build up coastal infrastructures⁵³. India could profit from the blue economy as part of the Bay of Bengal initiative.

Finally, India aims to leapfrog into a service-led economy. With its millions of highly educated workers, India is in a good position to compete in the globalising service markets. The National Association of Software and Services Companies suggests that India aims to capture 20% market share in Internet of Things sector, worth \$300 billion.⁵⁴ India aspires to build a cyber-security product and services industry of \$35 billion by 2025, and generate a skilled workforce of one million in the security sector.⁵⁵ Following the path its IT industry has already taken, there is ample opportunity for English-speaking, highly skilled workers to create income in the global crowdsourcing industry. Compared to Western workers, which are being deprived of social security, decent wages and workplace co-determination, for Indian workers the gig economy may still offer a way to get ahead. Accordingly, domestic worker app companies are expanding between 20%-60% month-to-month, bringing together households with domestic workers, at least those who have access to mobile technology and banking.⁵⁶ However, when digital crowdsourcing platforms allow employers to choose from offers originating from labour markets with vastly different wage levels, this extreme competition between the global labour reserve armies drives a race to the bottom, where only the lowest wages can

prevail. In sum, if the service sector will reward all these hopes is by no way certain. On the one hand, the digital division of labour allows service sector workers to compete in many more markets globally. On the other hand, some of these emerging jobs are already being automated.⁵⁷

The Human Economy

In the digital age, humans are needed to cater to the hopes and needs of humans. The human economy, from tourism to entertainment, from design to fashion, from health services to elderly care, from food to arts and crafts, from research to development has enormous growth potential. India has not even begun to explore these opportunities in full. In particular, the potential of the tourism industry to create employment, directly and indirectly, has not yet been fully exploited⁵⁸. Millions of livelihoods could also be created in the care economy⁵⁹. However, care work has primarily been provided by (female) family and neighbours, and remains largely without remuneration.

The human economy is not directed against technological innovation. On the contrary, the potential of technology, from curing diseases to tackling climate change, should be fully embraced. Digital rationalisation can be a welcome step in boosting the productivity and therefore competitiveness of economic sectors. Progressives have for a long time called for the liberation of humans from alienated labour. Freeing humans from stupefying monotonous tasks should therefore be seen as a step into the right direction. Therefore, the ultimate objective must not be to save inefficient employment, but to create livelihoods in the digital economy of tomorrow.

What needs to be tackled urgently, however, is the economic, social, and cultural impact of the digital transformation. The spectre of mass un- and underemployment could aggravate the demand problem to a point where the economic system itself reaches the point of collapse. The

current revolt against globalism will only be a small foretaste of what is to come when digital automation continues to threaten the livelihoods and dignity of the middle classes. In other words, the human economy will not emerge by itself, but needs to be jumpstarted and shaped by policy making.

Creating the human economy means to put humans front and centre. This means first to reverse the neoliberal paradigm of suppressing social cost for health care, social security, and public goods. Second, it means to boost those jobs which are not prone to automation, and to invest in the skillsets needed to work together in human robot teams. Third, it means to create new livelihoods in the digital economy by providing full capabilities to all to unleash their essential human talents: creativity, innovation, communication, flexibility, experience, learning and social interaction.

To level the playing field for human workers, innovative policies like robot taxes should be considered⁶⁰. To rein in the concentration of power in digital capitalism, a global framework to regulate digital monopolies and the free flow of venture capital is necessary. Policies to boost consumption demand are needed. Schemes like the Universal Basic Income scheme, however, need more careful consideration to avoid unintended side effects.

There is, however, a larger point at stake. Traditionally, work has provided more than just revenue for consumption; it has been the source of dignity, as well as a channel of inclusion in social and cultural life. The human economy, in other words, needs to be built around the recognition of all contributions to the common good. This is a profound paradigm shift, which will certainly invite pushback from free market ideologues as well as socially conservatives. One of the central battlefields will be the quest for the remuneration of care work, where cultural stereotypes and gender roles need to be tackled.

In sum, building the social and political platform for the human economy is the quintessential task for policy makers in the digital age.

The social democratic path to development

Echoing these insights, job creation should not be understood as a technical task, but as a political mandate. In order to win the race for development, India needs to move up the global value chain. Following Amartya Sen's capabilities approach, doing so requires investment in the skills and creativity of the workforce⁶¹. Building the workforce for the digital economy requires major investment in education, infrastructure and health services.

Generating the necessary revenue to pay for these public goods, however, is not an easy task. While the rich too often find ways to dodge taxes, the poor cannot afford to pay them. In India, accordingly, less than 1% of the population pays income tax⁶². The middle classes, feeling abused by the "self-serving elites" and the "entitled poor" refuse to shoulder the tax burden for the needed investments into their fellow compatriots. Unable to move up the global value chain, countries can then be stuck in a transformation trap of political conflict and economic stagnation.⁶³

Sustainable development, therefore, is only possible when a solid social foundation for solidarity is laid. What is needed is an inclusive compromise between established and emerging classes which provides social peace for development. What everyone could agree on is that by providing full capabilities for all, the resulting growth will make the cake bigger for everyone. The social democratic path to development, in other words, creates the social peace which allows society to embrace permanent disruptive change, and the political stability needed for redistributive capacity building. The future of work is not a given, but can and must be politically shaped.



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Imprint

© 2017 Friedrich-Ebert-Stiftung India Office
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