

# FUTURE OF WORK AND EDUCATION FOR THE DIGITAL AGE

## Demographic dividend or nightmare: A three-part strategy for addressing massive entrants to the workforce

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## Abstract

*Many nations throughout the world are confronting a demographic bulge in which a very large number of people are entering the workforce or secondary and university education. India, for example, will require 12-14million new jobs every year for the next 15 years and 76 million new secondary and 21 million new university students over the same period, and Central Africa and parts of Southeast Asia are not far behind. Without dramatically different thinking, meeting this challenge will simply not be possible. The availability of new and effective approaches to addressing this demographic trend means India will either inherit a major demographic dividend or nightmare. And, we have very little time to make a difference.*

*In three related PwC<sup>1</sup> reports, the Winning Leap, the Nagarik Framework and Reimagining Leadership, we are intending to provide a comprehensive approach to addressing this demographic dividend. The first describes the India opportunity at the middle and bottom of the demographic and economic pyramid (The Winning Leap). The second is focused on understanding the economic development requirements of the state of Uttar Pradesh, India and the means to create sustainable livelihood in the state, as one example of planning for development in a region with significant economic disadvantage (The Nagarik Project). The third defines the unique leadership capabilities required in India to steer the workforce to success by 2030 and the sustainable means to develop them (Reimagining Leadership: Steering India's workforce in 2030).*

*Through these studies, we identified three essential components for achieving this economic dividend: build an aggressive, citizen-centered plan for economic growth that recognises the real starting conditions of a region; adopt a leapfrog strategy focused upon building a massive number of entrepreneurs at a local level in addition to the traditional focus on a corporate growth model; and build a cadre of leaders who can design and implement such strategies. Without any of the three components the dividend will not be met. Strategies unsuited to the starting conditions will result in limited success; traditional approaches will only close part of the gap; and the lack of leaders to make the change happen will mean the ideas remain on paper or fail to execute.*

## Challenge

Many of the countries in the world that are least well-off will confront a massive demographic challenge over the next decades: they have very young populations,

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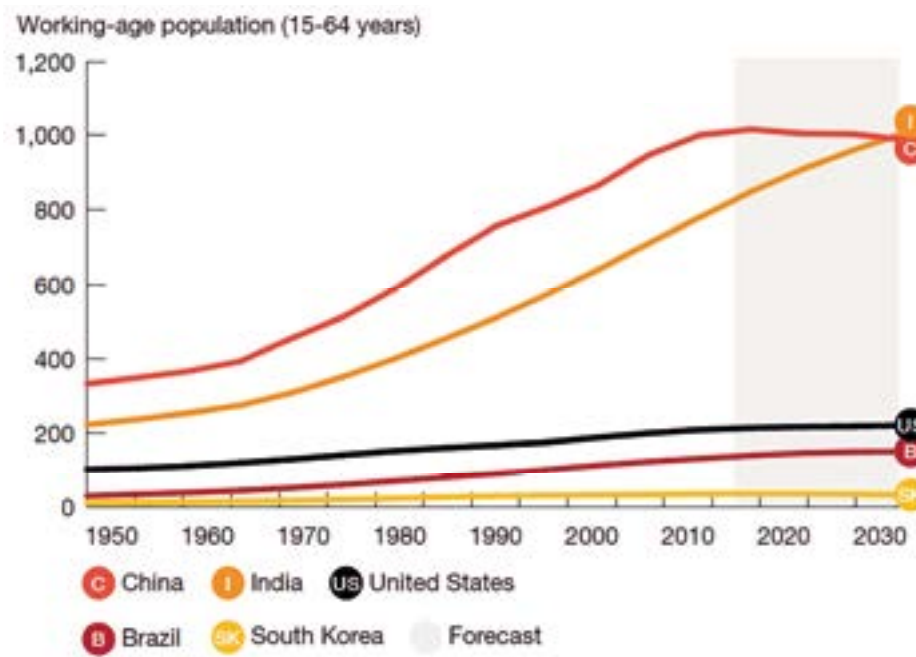
<sup>1</sup> PwC refers to the PwC network and/or one or more of its member firms, each of which is a separate legal entity. Please see [www.pwc.com/structure](http://www.pwc.com/structure) for further details.



many of whom will enter the workforce in a very short interval of time. In this brief, we focus on India as the example because our research was developed there, and because of the sheer scale of the problem in India, but the same issues apply in almost all of the countries facing similar demographic issues, particularly those in Central Africa, parts of the Middle East and Southeast Asia.

India is a young country; nearly 65% of its population is younger than 35. It has an opportunity to drive economic growth on the back of its rising working-age population (those aged 15-64). This population has boasted a compound annual growth rate (CAGR) of 2% since 2000, a situation often referred to as India's demographic dividend. The nation is expected to add almost 10-12m people to its workforce every year over the next two decades, with the working-age population crossing the 1billion mark by 2030.

**Figure 1.** India's working-age population



**Source:** United Nations Development Programme

However, India risks squandering this demographic opportunity if it cannot create quality employment opportunities at scale and train its growing workforce to excel in those jobs. With greater access to information and growing aspirations among the nation's youth, the quality of employment that India provides will prove as crucial as the quantity. It is important to realise this is not just an issue for the nations confronting the demographic dividend or crisis. It is also a major risk for all G20 countries as they face the potential for significant migration, political instability and declining global growth if the challenges and opportunities are not addressed effectively in places

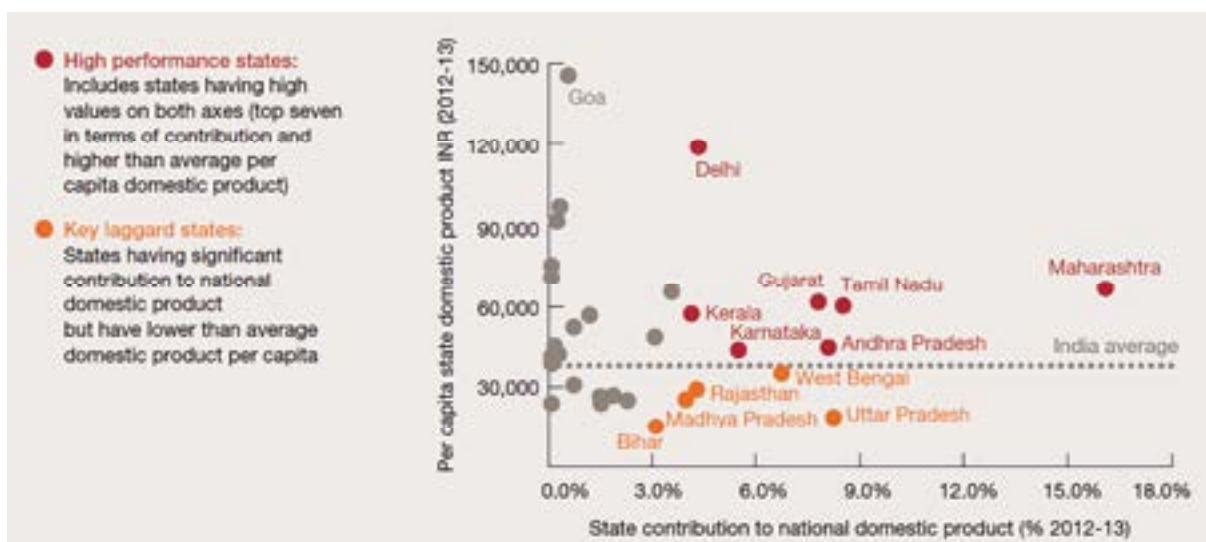


such as India, much of Africa, and parts of Southeast Asia.

This will put significant pressure on the education systems in those places. For India, it means having to add 6 million primary students, 76 million secondary students and 21 million university students to the current numbers. To achieve this through the building of traditional schools and universities would require the construction of 500,000 new institutions, requiring orders of magnitude more budget than India has in its entirety on an annual basis.

But, there is a second challenge. There is a dramatic difference in the relative quality of economic development across parts of the country. Figure 2 shows the relative economic performance of different States in India. The fundamental challenge is that a significant number of states are at a level of economic development and have a basis of economic activity that needs to be considered in developing a skills development strategy. Different parts of the country start in very different positions. A state composed of thousands of small villages with small farm agriculture as the primary basis of economic activity requires a very different educational approach to those with significant technology, advanced services, finance or advanced manufacturing as the basis of their economic activity. The challenge in India is how large the difference in starting points is across states, and the sheer scale of the need in each case. Thus, it is not unique to India, as most countries with similar demographic characteristics as India have pockets of highly developed areas and vast regions that are less well-developed.

**Figure 2.** High and low performing States across India



\*State domestic product figures pertain to net state domestic product at constant (2004-05) prices (Net product = Gross product - capital depreciation)

**Source:** Directorate of Economics Statistics, Central Statistical Organization



Taken together these two challenges entail both a massive scale of need, which simply cannot be met through traditional means, and a variability of need that requires significant adaptation of approach across regions of India. Existing models will just not work. The sheer scale of this dual challenge is daunting.

## Proposal

### A three-part proposal

We chose in this section to illustrate the solutions to managing the demographic dividend through India and one of its least well-developed States. But, the ideas contained apply to any nation with similar demographic challenges. Because of the size, speed and scale of the entry of people into the workforce in India traditional approaches will simply not be sufficient. We propose that to address this challenge effectively it will be necessary to take a tripartite approach:

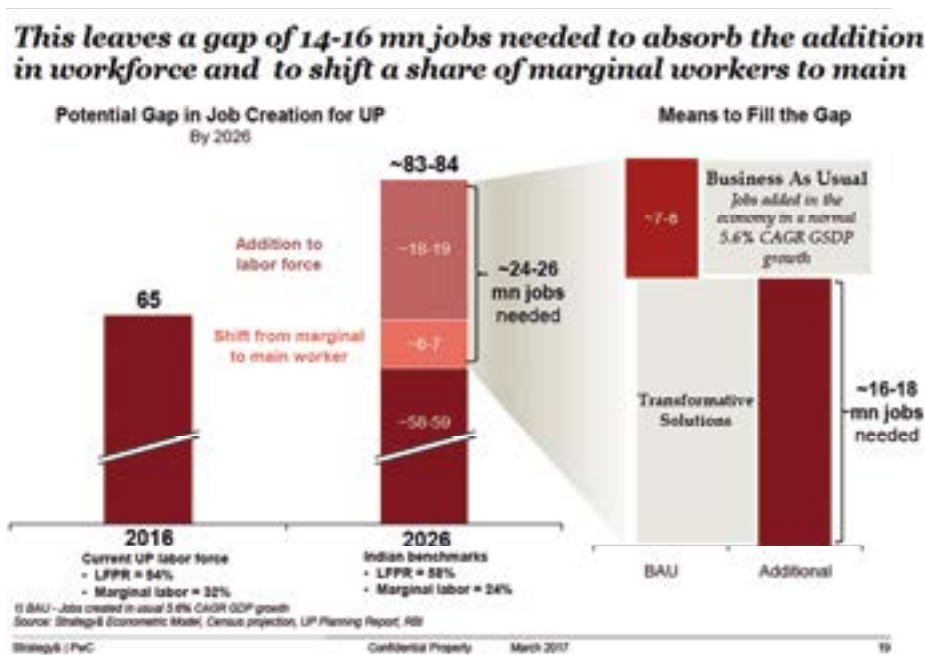
1. Comprehensive analysis of effective growth models given regional conditions: Project Nagarik
2. A radical approach to building jobs and requisite skills: The Winning Leap
3. The development of leaders able to implement these approaches: Reimagining Leadership

### Comprehensive Region Specific Analysis with Employment and Skills Plan

If India continues on its present growth course, it could have a US\$5.6 trillion economy by 2034. But, as Figure 3 illustrates, the present growth path is insufficient to meet the need to reduce unemployment and underemployment in the future. Instead that would require a US\$10 trillion economy, for which India will need to accelerate its growth momentum significantly. This future will not be determined by developed states like Gujarat, Kamataka or urban centers like Bangalore or Ahmedabad, but by the development of states like Uttar Pradash, Bihar, Jharkhand, Chhattisgarth, Madya Pradesh, Assam, West Bengal, and Orissa which comprise 50% of the country's population and the vast majority of India's underemployed and unemployed. It is essential that job creation and educational development be tailored to each of these states based upon a clear analysis of a feasible path to job growth.



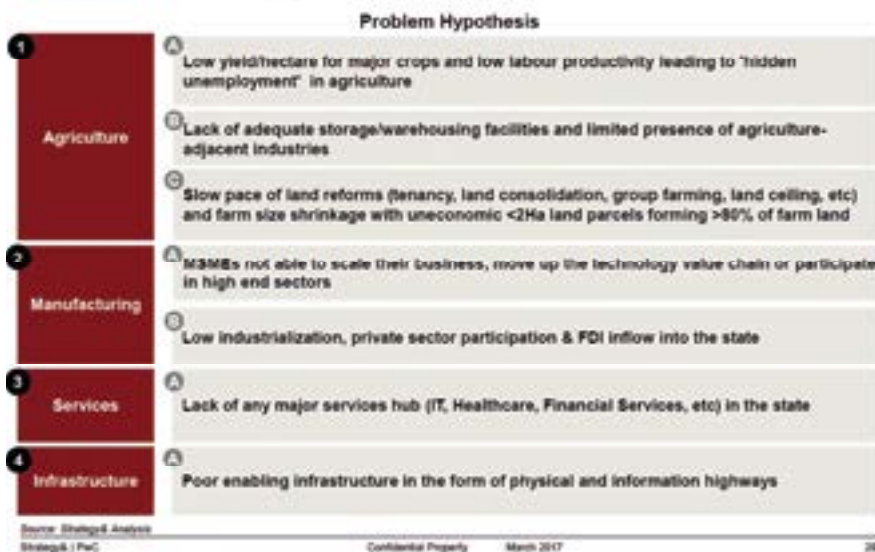
Figure 3. the coming job gap for Uttar Pradesh



To achieve growth in these less well-developed states will require a development strategy meeting two key criteria, one that depends upon and encourages the people of the state to take a leadership role in the growth of their economy – a civilian-centered approach – and one that begins with a realistic appraisal of what is feasible. For example, consider the list of starting conditions specific to industries in Uttar Pradesh.

Figure 4. Starting conditions for a job creation and education strategy for Uttar Pradesh

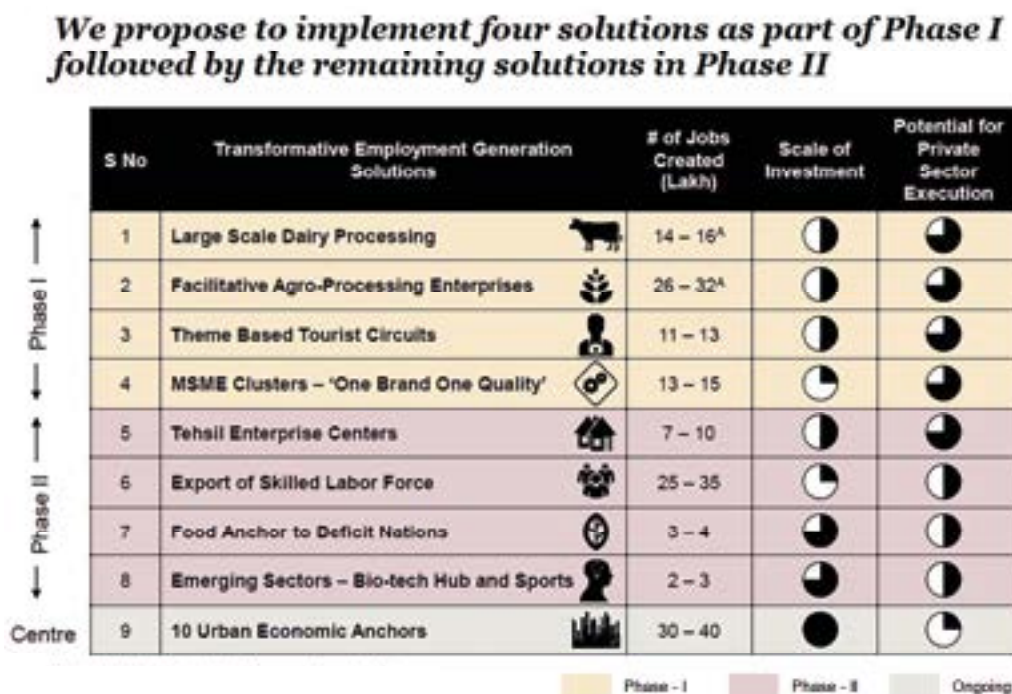
**We have developed problem hypothesis for each sector as well as over-arching ones across sectors (1/2)**





Given the significant and quite unique nature of these conditions, they must be taken into consideration for building any plan for Uttar Pradesh. Development strategies or skills building approaches based upon India as a whole will not work in this context. A phased approach; beginning with enhancing the core economic sectors in the state and evolving a more advanced economy over time is a more realistic approach. We lay out what such an approach might look like in Figure 5, which entails a progression in development from a highly inefficient agricultural economic base to one that eventually entails exporting talent and food to the world and developing both significant economic urban centers and alternative future-focused economic sectors. The core ideas in the plan are to begin with feasible steps at enhancing the core economic activity at very large scale, invest in building skills in the more efficient core industry, develop adjacent economic activity that builds off of the core and enhances the brand of the region, focus on a few key centers for more advanced industries related to the core, export talent and food from this newly-capable region to others that are agriculturally challenged and consolidate a few very strong urban centers. The final step seems a long way from a very small scale, inefficient agriculture base, but is achievable in deliberate steps in which the indigenous population grows itself into a more effective set of economic actors.

**Figure 5.** a phased approach to job creation in Uttar Pradesh



**Note:** A) Includes indirect impact to farmers and marginal labors

**Source:** Strategy & Analysis





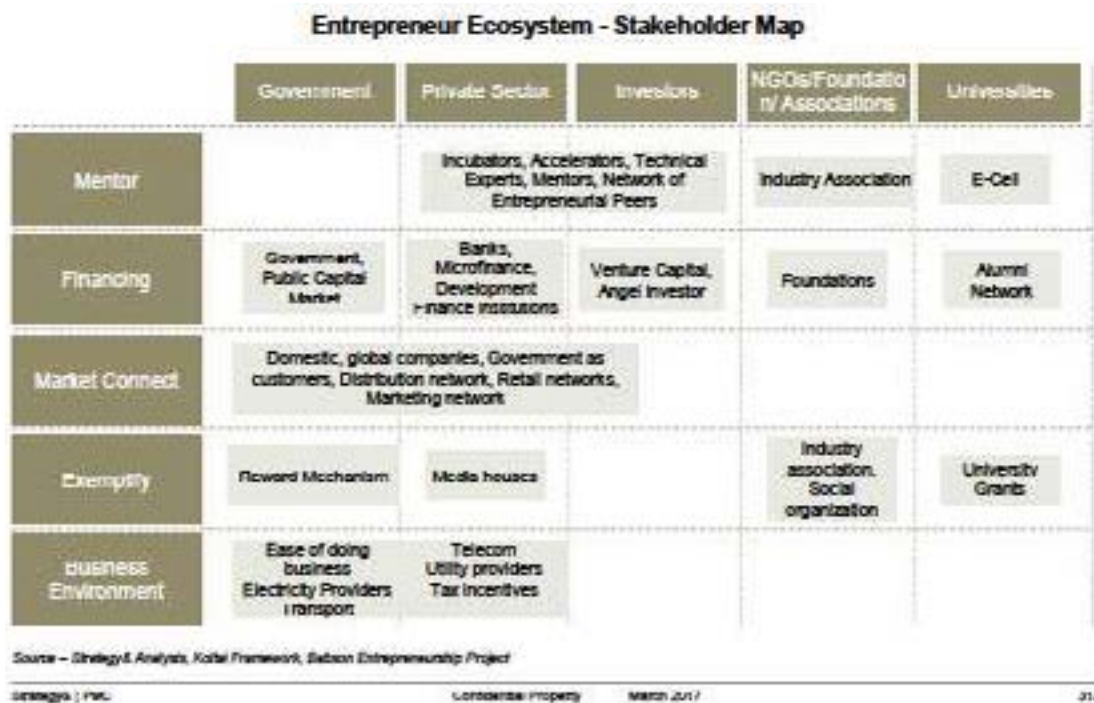
## A radical approach to job creation and education

Simple inspection of Figures 3 and 5 illustrates the magnitude of the challenge in just one state. And, there is only 15 years before the demographic boom in India becomes a major success or major failure. There are no dearth of schemes in Uttar Pradesh for economic development and job creation. Most, however, are not predicated upon the starting conditions of the state. For instance, out of the 44 Lakh MMEs in the state, fewer than 5% have benefitted from schemes related to technology upgrading, freight rationalisation and market development assistance. And, most plans are of sub-critical scale and speed. There is a need to develop 16-18 million jobs in 15 years for Uttar Pradesh to take advantage of the demographic opportunity instead of facing a demographic crisis. At the level of India, this entails hundreds of millions of new jobs that are needed in the same time period, without even considering the implications of job loss due to technology.

This scale and speed require a radical new approach, one focused on engendering solutions at the level of the citizen and empowering a massive number of new entrepreneurs at the local level. Even adopting some of the ideas articulated for the corporate sector in the Winning Leap, corporations do not have the capacity to generate the 12m jobs needed each year to absorb the flood of job-market entrants unleashed by India's demographic dividend. The entrepreneurial sector must therefore play a key role. To do so, India must cultivate entrepreneurs on a scale unprecedented in its history. Furthermore, the notion of entrepreneurialism should not be limited to growth-oriented companies rooted in India's major urban centres. Entrepreneurialism must also percolate in smaller towns and districts throughout the country. It is not that India lacks entrepreneurial spirit; a case in point is India's IT revolution, whose exports over the past two decades exploded from less than US\$100m to US\$86bn in 2013-2014. It is that entrepreneurialism has not taken root at the local level in places where forces such as culture and history mitigate envisioning entrepreneurial enterprise as a possibility. Addressing this problem will require a coordinated effort across all significant actors in Indian society if we are to build the momentum. And, it will require refocusing existing thinking toward the neglected citizen of the poorest states. Nagarik was chosen by PwC as the name for this approach, as it is Hindi word for 'citizen'. This level of reorientation and coordination is extremely difficult to achieve and many will suggest taking months or years to study how best to approach the problem. We do not mean to imply that all elements of the plan outlined in the Nagarik Framework are right. We do mean to say that beginning a concerted, coordinated effort focused on the States in India and other parts of the world that are facing such demographic challenges mixed with poor starting conditions is essential **right now**. And that approach needs to begin with an honest assessment of a feasible plan for appropriately phased growth, and one focused on encouraging millions of new local entrepreneurs.



**Figure 6.** the roles of public and private actors in creating an economic ecosystem



We will require similar radical and comprehensive thinking in the development of a response to the educational needs to support initiatives such as Project Nagarik, both because of the size and speed of the need, but also because of the need for education to support economic restructuring in real time. The approach requires again a multi-party private and public effort and means not just rethinking the notion of teaching and learning, but also what we consider a school and the relation between the school or university and the context in which it operates.

## Building local leaders in a new model of leadership

Considering the scale, scope, speed and level of innovation required to address this demographic challenge, two additional elements are needed: a completely different mindset and leaders who can adopt this mindset to address these challenges. This will require instilling confidence and pride in local circumstances, over and above traditional leadership skills and attributes. The approach moves away from top-down help to middle-up effort by leaders. While the employment opportunities and skills can be built, the bigger opportunity and the need here is not just to build vocational capabilities, but to inspire the youth and the leadership that has to make this happen. It is simply not possible to successfully implement the sort of ideas suggested above without the requisite leadership.



PwC India's white paper Reimagining Leadership: Steering India's workforce in 2030, based on research with leaders throughout India, considers both the skills required of leaders to achieve the Winning Leap and the means to develop them. Given the complexity, speed and scale of the need at national, state, corporate and local political and entrepreneurial level there are very different attributes required of our leaders. And, a very different approach for developing leaders is also required. The capabilities required of leaders incorporates some that leaders have always had to exhibit, but also highlights those that are especially important today:

1. Capacity to learn and evolve
2. Building and leveraging networks
3. Self-awareness

And capabilities especially critical given the challenges outlined above:

1. Disruptive envisioning
2. Multi-dimensional sensemaking
3. Orientation toward institution building
4. Managing multi-dimensional diversity
5. Personal credibility
6. Talent magnetism

This is a heady list of capabilities. But, it is not enough. Leaders also need to be able to manage five apparent paradoxes, or simultaneities. There are characteristics that sit on opposite ends of a spectrum where the leader needs to manage across all aspects of the spectrum to be successful.

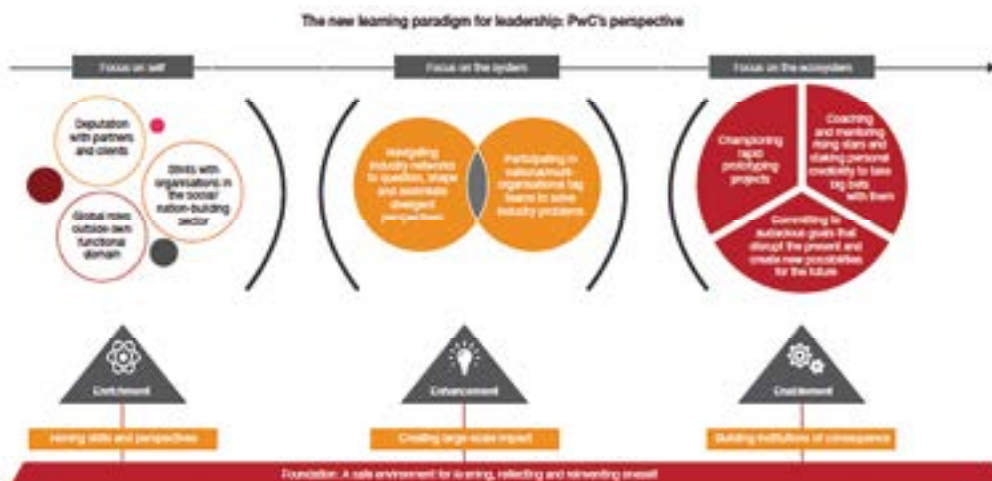


**Figure 7.** five simultaneities of leadership in 21st Century

The top five simultaneities are:



To develop leaders with such attributes will require more than our typical approaches. From our research regarding developing leaders for the pace, complexity and speed of change required for the 21st century needs of India three elements were identified: enrichment – honing one’s skills through multiple experiences that take the individual beyond the known, working with partner organisations, roles outside one’s region or stints in a different sector; enhancement – magnifying the scope of impact by partnering with industrial bodies or local, regional or national teams to challenge paradigms and drive projects that reshape thinking and action; and enablement – energising and invigorating the ecosystem, engaging to build institutions and new leaders, driving new ways of thinking throughout the system in which the leader operates and committing to audacious goals and finding ways of meeting them. All while helping the leader to drive real results in the short term to provide them the permission to support dramatic change. Without such different approaches to leadership development we will not develop the people who can make the changes we need.





## Implications for G20 nations

The three-part requirement outlined above cannot be met by young nations alone and nor will the consequences of not meeting them be theirs alone. They cannot be met without support from the rest of the G20, because untapped capital, expertise and educational capacity sit in Europe, the Americas and Japan and there is simply not enough money, expertise nor educational capacity to meet the massive needs of India, Central Africa and other countries with large numbers of people about to enter the workforce. The question could be raised as to why the rest of the G20 should care to help. The answer is simple. The level of migration, political instability and drain of the global economy that would result from failure to do so will be at a level we have never seen. The challenges of immigration currently facing Europe, for example, will pale in comparison if we do not act fast. This will, however, require each country to give up assumptions and not carry past practice with them as they address these issues. For example, if we apply the traditional models of education to India we would need to build 2,000 new universities over the next ten years. Such an approach would require the national budget several times over be dedicated just to education. Clearly, that cannot happen. We do not just need new kinds of leaders and approaches in the nations facing the challenge, but also those lending aid.



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2. Nagarik – Transforming UP Through Economic Development. Research report by PwC India, March 2017
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