

## Short Notes from World Economic Forum, annual meet at Davos, Switzerland, from January 20 to January 23, 2016

Awadh TPSP will make it compatible with fourth industrial revolution, which has started effecting society and the future workforce will need to align its skill set to keep pace.

Change won't wait for us: business leaders, educators and governments all need to be proactive in up-skilling and retraining people so everyone can benefit from the Fourth Industrial Revolution.

It had been defined as 'a collective term for technologies and concepts of value chain organization' which draws together Cyber-Physical Systems, the Internet of Things and the Internet of Services. Within the modular structured Smart Factories of Industry 4.0, cyber-physical systems monitor physical processes, create a virtual copy of the physical world and make decentralized decisions. Over the Internet of Things, cyber-physical systems communicate and cooperate with each other and with humans in real time, and via the Internet of Services, both internal and cross-organizational services are offered and utilized by participants of the value chain. The basic principle of Industry 4.0 is that by connecting machines, work pieces and systems, businesses are creating intelligent networks along the entire value chain that can control each other autonomously.

Challenges which have been identified<sup>[citation needed]</sup> include

- **IT security issues**, which are greatly aggravated by the inherent need to open up those previously closed production shops
- Reliability and stability needed for critical machine-to-machine communication (M2M), including very short and stable latency times
- Need to maintain the integrity of production processes
- Need to avoid any IT snags, those would cause expensive production outages
- Need to protect industrial knowhow (contained also in the control files for the industrial automation gear)
- Lack of adequate skill-sets to expedite the march towards fourth industrial revolution
- Threat of redundancy of the corporate IT department
- General reluctance to change by stakeholders

Modern information and communication technologies like Cyber-Physical Systems, Big Data or Cloud Computing will help predict the possibility to

increase productivity, quality and flexibility within the manufacturing industry and thus to understand advantages within the competition.

A number of key impact areas emerge: Services and Business Models, Reliability and continuous productivity, IT security, Machine safety, Product lifecycles, Industry value chain, Workers, Socio-economic

### Views of specialists:

1. [Alex Gray](#) : Five years from now, over one-third of skills (35%) that are considered important in today's workforce will have changed.

By 2020, the [Fourth Industrial Revolution](#) will have brought us advanced robotics and autonomous transport, artificial intelligence and machine learning, advanced materials, biotechnology and genomics.

These developments will transform the way we live, and the way we work. Some jobs will disappear, others will grow and jobs that don't even exist today will become commonplace. What is certain is that the future workforce will need to align its skill set to keep pace.

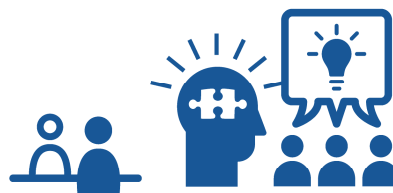
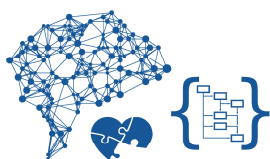
# Top 10 skills

## in 2020

1. Complex Problem Solving
2. Critical Thinking
3. Creativity
4. People Management
5. Coordinating with Others
6. Emotional Intelligence
7. Judgment and Decision Making
8. Service Orientation
9. Negotiation
10. Cognitive Flexibility

## in 2015

1. Complex Problem Solving
2. Coordinating with Others
3. People Management
4. Critical Thinking
5. Negotiation
6. Quality Control
7. Service Orientation
8. Judgment and Decision Making
9. Active Listening
10. Creativity



Source: Future of Jobs Report, World Economic Forum

## What skills will change most?

Creativity will become one of the top three skills workers will need. With the avalanche of new products, new technologies and new ways of working, workers are going to have to become more creative in order to benefit from these changes.

Robots may help us get to where we want to be faster, but they can't be as creative as humans (yet).

Whereas negotiation and flexibility are high on the list of skills for 2015, in 2020 they will begin to drop from the top 10 as machines, using masses of data, begin to make our decisions for us.

Emotional intelligence, which doesn't feature in the top 10 today, will become one of the top skills needed by all.

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## 2. **Joe Biden, Vice President, USA :Five ways to prepare for the Fourth Industrial Revolution**

a) **First**, we need universal access to affordable education and job training. There's going to be a constant requirement for workers to retool and retrain for the very jobs they possess, because the technology that they're engaged with is moving far beyond the ability to keep up with whatever basic education they have. The jobs they possess, particularly in areas of IT, advanced manufacturing, healthcare and energy, are going to need lifelong education.

b) **Secondly**, we need to continue to ensure basic protection for workers as these changes take place. I mean a living wage, payment of overtime, child care, sick leave, the right to unionize, to collectively bargain. embrace the obligation to your workers as well as your shareholders. It's good for workers; it's good for your business; it's good for your productivity; and it's good for society.

c) **Third**, we have to modernize our infrastructure. Governments have fundamental responsibilities to build roads, bridges, railways, ports, broadband.

d) **Fourth**: we need a more progressive tax code. Not confiscatory policy, not socialism, but everybody should pay proportionately a fair share. Keeping billions of dollars in offshore tax havens might be good for your shareholders, but it robs your home country. So bring it back. Invest it in the communities in which you live, the enterprises – the communities that allow your enterprise to thrive.

e) **Lastly**, we need to expand access to capital. I'm calling on all of you to make existing capital and the tools that support entrepreneurship more widely available to people who haven't had access to it before.

## 3. A New Climate For Doing Business



#### 4. [The Transformation of Tomorrow](#)

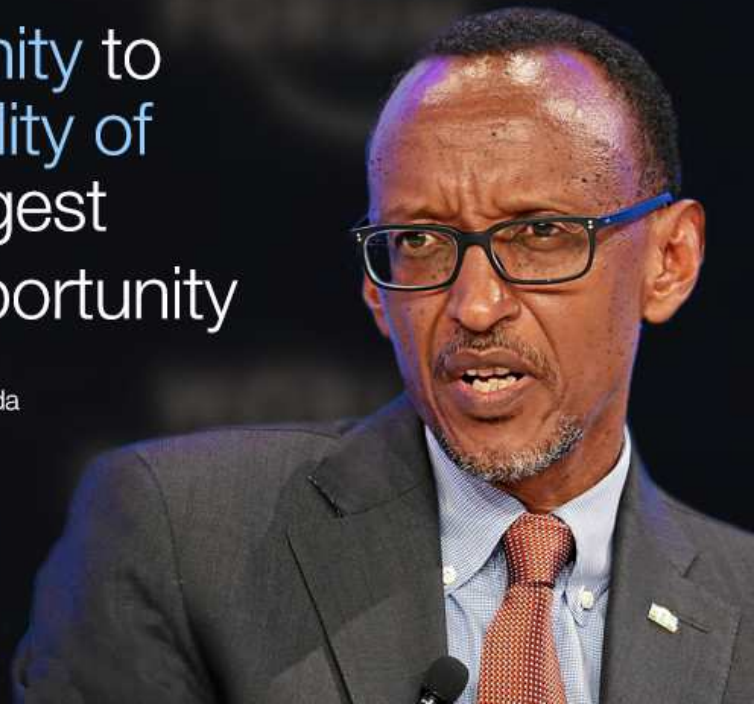


#### 5. [The Digital Transformation of Industries](#)



The opportunity to  
raise the quality of  
life is the biggest  
business opportunity

Paul Kagame  
President of the Republic of Rwanda



## 6. The Digital Transformation of Industries

You can always  
**go faster** than  
you think you can

Meg Whitman  
President and CEO, Hewlett Packard Enterprise



7.



8.







9. Nearly 16 years on, [Klaus Schwab](#), founder of the World Economic Forum ([WEF](#)), has just published an equally passionate treatise on the power of emerging technologies. In his new book [The Fourth Industrial](#)

Revolution – published to coincide with the WEF annual meeting in Davos – Schwab argues that we are at the beginning of a technological revolution that “is fundamentally changing the way we live, work, and relate to one another.”



## Navigating the next industrial revolution

Revolution	Year	Information	
	1	1784	Steam, water, mechanical production equipment
	2	1870	Division of labour, electricity, mass production
	3	1969	Electronics, IT, automated production
	4	?	Cyber-physical systems

**Schwab fleshes this out with three specific challenges:**

- **Raise awareness and understanding of the promise and pitfalls of the fourth industrial revolution** across all sectors of society.
- **Develop narratives around how** stakeholders can shape the revolution for current and future generations.
- **Restructure economic, social and political systems** to take full advantage of the opportunities the revolution presents.

Gene editing, autonomous vehicles, the Internet of Things and autonomous weapons, for example, are just four of many, many areas where, despite our best efforts, we are way behind the curve in understanding what could go wrong and how to prevent it.

10. For IMF chief Christine Lagarde, developments in China are merely a sign its economy is transitioning to a “new normal” – moving away from fast, export-driven and resource-intensive growth, towards something more sustainable. While this might lead to some volatility in the short term, it’s nothing markets can’t handle.





A degree of  
volatility is OK.  
The market sorts  
things out,  
eventually

Christine Lagarde  
Managing Director,  
International Monetary Fund

11. Nobel Prize-winning economist Joseph Stiglitz questioned whether we should really be measuring GDP growth anyway. “What we measure informs what we do. And if we’re measuring the wrong thing, we’re going to do the wrong thing.” **Time for a new way of assessing global progress?**



GDP is not a good  
measure of economic  
performance, it's not a  
good measure of  
well-being

Joseph Stiglitz  
Economist

12.



**13. Robots in war: the next weapons of mass destruction?** By Stuart Russell is a Professor of Computer Science at the University of California Berkeley.

The primary strategic impact of autonomous weapons lies not so much in combat superiority compared to manned systems and human soldiers, but in their *scalability*. The pace of technological advances in the area of autonomy seems to be somewhat faster than the typical process of creating arms-control treaties

**14. Can education beat inequality?** By *Drew Faust is the President of Harvard and the Lincoln Professor of History.*

Knowledge is — and will remain — the most powerful currency, and economic mobility continues to be contingent, in large part, on access to quality education. Universities expand opportunity and prepare young people for meaningful engagement with their work and with the world.



15. **No company can solve a massive global problem on its own**

By Wiebe Draijer, Jane Nelson, Lisa Dreier

Create networks of organizations that can act together to reach common goals. . A single organization can serve as a catalyst, and a small group of organizations can drive a much wider network of change. But this requires a new scale of leadership: system leadership. A [Harvard Kennedy School case study](#) on the initiative outlined three steps that enable collaboration on a massive scale and can be applied in any sector. 1. Cultivate a shared vision for change 2. Empower widespread innovation and action. 3. Enable mutual accountability for progress.

16. Dileep George, artificial intelligence and neuroscience researcher

“Imagine a robot capable of treating Ebola patients or cleaning up nuclear waste.”

17. Enrique Peña Nieto, President of Mexico



“Mexico is one of the only nations whose constitution recognizes the right of its people to a broadband internet connection.”

18.



**19. Gary Coleman, Global Industry and Senior Client Advisor, Deloitte Consulting**

“The Fourth Industrial Revolution is still in its nascent state. But with the swift pace of change and disruption to business and society, the time to join in is now.”

**20. André Kudelski, Chairman and CEO of Kudelski Group**

“Any skilled engineer can take control remotely of any connected 'thing'. Society has not yet realized the incredible scenarios this capability creates.”

**21. Robert J. Shiller, 2013 Nobel laureate in economics, Professor of Economics, Yale University**

“You cannot wait until a house burns down to buy fire insurance on it. We cannot wait until there are massive dislocations in our society to prepare for the Fourth Industrial Revolution.”



**22. Birgit Skarstein, Double paralympic athlete and World Rowing Champion, Norway**

“For people with a disability, the Fourth Industrial Revolution will give us super powers.”

**23. Pierre Nanterme, CEO of Accenture**



24.



25.



26.



If we act with **bold leadership**, we can achieve **meaningful progress**

Leonardo DiCaprio  
Actor and United Nations Messenger of Peace  
for Climate Change

27.



**Goals** are only **wishes** unless you have a **plan**

Melinda Gates  
Bill & Melinda Gates Foundation