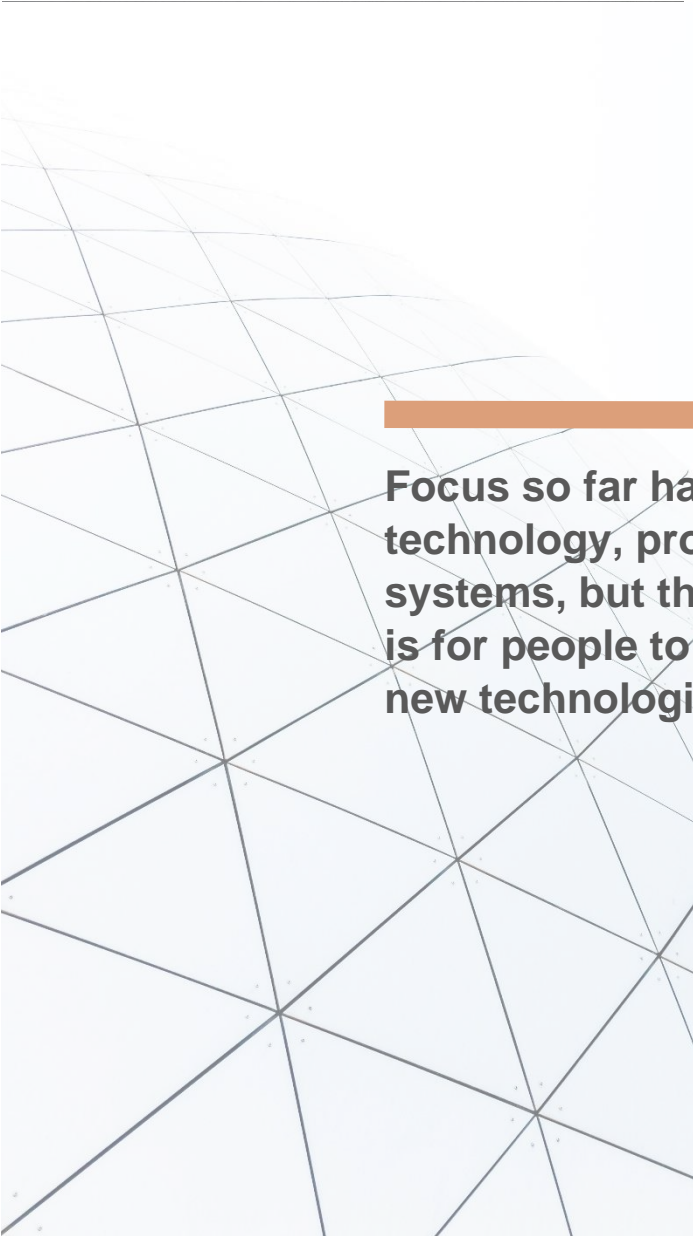




Manage the People Side of Industry 4.0





Focus so far has been on technology, processes, and systems, but the real challenge is for people to adopt to all new technologies.

Manufacturing firms have probably not missed out on the discussion that Industry 4.0 brings a lot of potentials. Higher quality and productivity together with the enablement of more customized and adaptive production will have large impact on technology, systems and processes. History show, that previous industrial revolutions have always been subject to fear of change and loss of jobs. Fact is that the opposite has occurred; status of industrial workers has been improved, job content has become more stimulating and the industrial worker has been subject to higher degrees of empowerment. It is our strong opinion that Industry 4.0, accelerating the digital evolution, will in the end prove to have more positive impact than negative effects.

This far the discussion has mainly been around the prevailing technologies and what has not been discussed as frequently is the impact on the soft dimensions of organizations and how those should be managed. To manage the soft dimensions of Industry 4.0 will be a step by step process and a crucial aspect when new competences and skills will be required.

Manage the People Side of Industry 4.0

In 2018 Fortos launched a study on Industry 4.0, investigating the impact this fourth industrial revolution has on People. The study was conducted together with a handful of selected large industry corporations with headquarters or base in Sweden, reaching over several lines of business, but with the common challenge to operate large manufacturing sites with products in the forefront of their industries.

In the course of our research, we created a set of hypotheses based on a structured framework and tested our hypotheses through a survey and through focus interviews with representatives from selected industrial corporations.

The hypotheses were proven to have good support from the respondents and what we learnt from our conversations was that even if change is driven through technology, managing the people side of change is one of the most important key enablers.

As operational tasks will be more automated and humans will work in collaboration with robots in the factories, a competence shift will be required where industrial workers as well as supporting functions need to develop new skills.

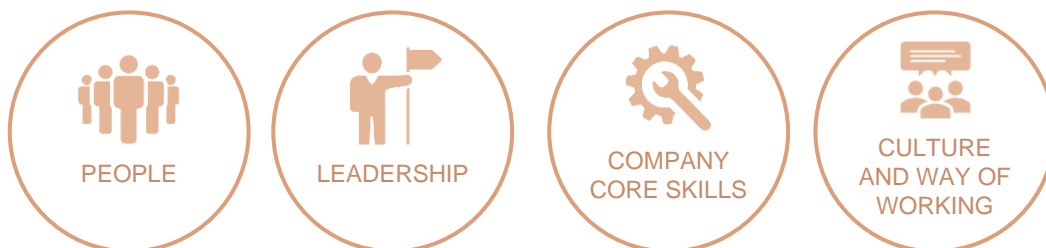
To manage such competence shift will also require companies to assess their current leadership where focus will be on developing people through coaching and empowerment. This will be necessary as teams will become more autonomous and cross functional, managing their own tasks in a less hierarchical structure.

To make the transition into new organizational structures and new roles with new work content, we also learnt that keeping an early and close collaboration with the trade unions is a key success factor which will make the change process smoother, reaching common goals.

INDUSTRY 4.0

Impact on soft dimensions

Industry 4.0 changes current ways of working and organizing. It has high impact on the strategy, processes and systems, and organizational structure of industrial companies. Although industry 4.0 initiatives often originate and gain momentum within the harder dimensions of an organization, it will highly affect organizations' soft dimensions as well. Summarized, our study proved that we can expect an extensive impact in four major dimensions:





“THE WORK CONTENT WILL BE MORE KNOWLEDGE INTENSE AND THEREBY A BROADER AND DEEPER COMPETENCE WILL BE NEEDED.”

What’s the impact?

When moving into industry 4.0, the people dimension will be one of the first to change. While the work content becomes more knowledge intense, a shift in competence and working structure is needed. People that previously have followed instructions are now pushed into more responsibility where they are expected to make decisions and take actions in new ways. The required shift in competences also means that continuous learning becomes key where people need to gain a broader understanding of the value chain, while being faced with problems that previously have been out of their scope. To manage this skill gap will be a complex challenge for organizations and people’s willingness to change will be a crucial factor.

How to manage the change?

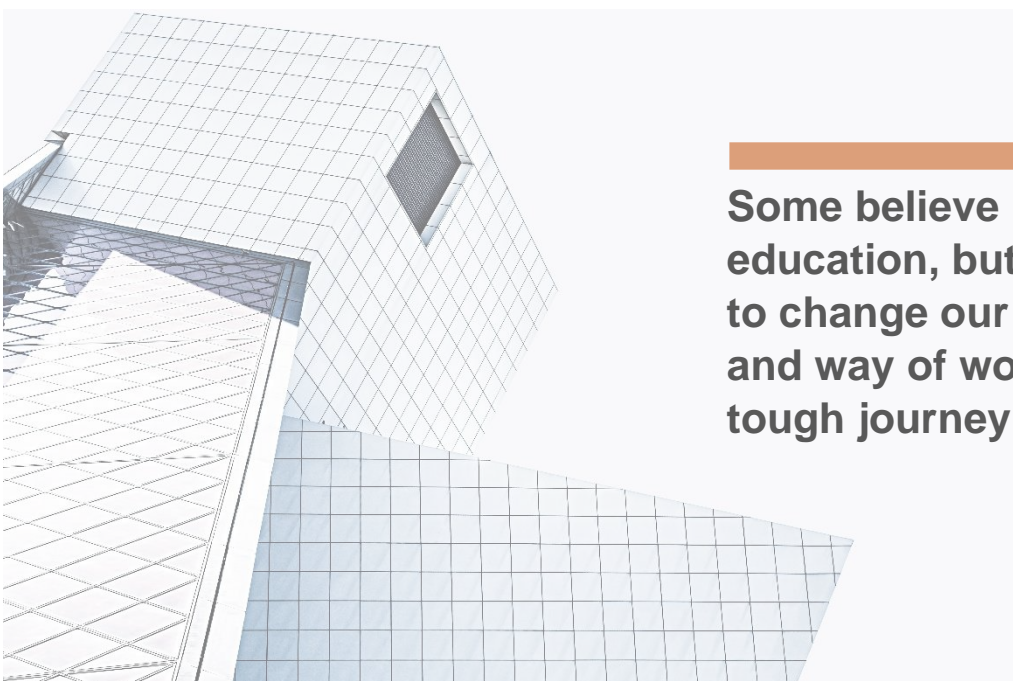
Encourage and support people to move from following instructions to taking decisions and actions on their own.

The impact of new technology will require both industry workers e.g., Operators and supporting functions e.g., Quality, Maintenance, Technology Engineers as well as employees within Logistics and IT to acquire new competence and climb the value chain, up streams. Change in operations will be continuous and in real time and new technologies will require people to act and adapt accordingly.

Continuously acquiring new competence will enable the Operator teams to become more autonomous and able to manage activities and tasks that were previously managed by supporting functions. Opening for cross functional learning on operator level will accelerate the learning curve creating learnings between functions and/ or manufacturing sites.

Subsequently, the support functions can free up time to take on more strategic or tactic tasks supporting the shift into new technology and Industry 4.0 implementation.

Communicating the change journey on all levels is important to open for collaboration and to avoid unnecessary conflicts between functions when shifting competence and job content.



Some believe it is only about education, but we also need to change our organization and way of working. It is a tough journey.



“THE COACHING LEADERSHIP WILL BE KEY TO GET LEVERAGE FROM THE COMPETENCE AND EXPERIENCE FROM THE EMPLOYEES.”

What’s the impact?

Changes in the leadership dimension will be soon to follow. When the factory workers shift their competences and take on new tasks, a coaching leadership style will be key to leverage the competences and experiences. When people move from following instructions to making more decisions, taking actions and when teams are becoming more and more autonomous, the leadership needs to adjust to provide employees with the right prerequisites. Such leadership includes leaders that provide the employees with the right questions rather than giving all the answers.

As mentioned for the people dimension, willingness to change among employees will be crucial for an organization’s ability to develop new competences and skills. Therefore, the new leaders must be able to manage mistrust, uncertainty and resistance to change. Leaders will also need to let go of own control and trust their people with delegated tasks. Such leadership skills become especially important in the beginning of the change when resistance and skepticism can be strong. The type of leadership needed will vary during different stages of the industry 4.0 implementation, which makes the leadership dimension complex.

How to manage the change?

To manage a shift in leadership, it is crucial that leaders are given the right prerequisites to develop as coaches and that this leadership style is established throughout the organization.

The leaders on the shop floor could also benefit from having a leader network where the leaders can support and learn from each other as they develop new skills.

With a coaching leadership several benefits are gained. Employees dare to move outside their comfort zone, engage in new activities and develop new competences. Teams are empowered and become self-managed. Further, the leadership style has positive effects on employee engagement and drive and could have even further positive effects, such as health and wellbeing.

To have a shared vision and clear objectives is important to guide the change journey in wanted direction.

A valid reflection is whether the existing leaders can coach the co-workers of the future?



“FLEXIBILITY AND AGILITY TO EVALUATE AND IMPLEMENT NEW TECHNOLOGY WILL BE KEY SUCCESS FACTORS.”

What’s the impact?

Continuous improvement has been the core for many organizations to stay competitive. With industry 4.0 a company core skill will also be to master continuous change. Having management to support change becomes crucial to enable this.

Simple jobs are being replaced by robots and the analysis process is becoming more and more complex, as is the ability to manage automated cells in the production.

Big data will be one of the key drivers of industry 4.0; to collect, store and use data driven analysis throughout the whole value chain will therefore be another core skill for organizations in Industry 4.0. Those who manage to improve the full value chain will be the ones who succeed.

How to manage the change?

As new core skills are developed, the borders between the factory worker and the support functions are shifting and new interfaces are created.

The change with new work content and transitions of competence in the organization is typically started in parts of the supporting functions that are not directly connected to operations. Supporting functions are challenged with strategies and new technology development that will need their focus. This new focus and competence shift will impact also on the interfaces closest to operations, enabling a transfer of new task to the operator teams.

Examples of new competences and new work content developed on the shop floor could be:

- Self-management and new ways of working with own planning and scheduling of activities enabling flexibility in the teams
- Shortening stoppage time by re-setting the line
- Development of instructions for operations such as quality instructions including digital solutions
- Performing re-balancing of the line as well as maintenance activities
- Pro-actively proposing solutions to increase efficiency or overcome problems



What's the impact?

The company culture is crucial for succeeding with changes in the other dimensions. At the same time, the culture is the most difficult dimension to change. The culture will need to be based on empowerment, transparency and trust; in line and together with the expectations of people taking actions and making decisions to a larger extent than before. Another important aspect of the future company culture is that the identity and behavior of the company and the employees will need to be more aligned. If there exists a clear gap between current traditions and company cultures and those needed of the future, the time and effort needed to bridge the gap should not be underestimated.

How to manage the change?

Organizations need to develop to become less hierarchical with stronger networks as work will be more cross functional. People will need to have access to relevant information to be able to take decisions.

Having a culture with transparency, with relevant information available where and when needed and giving required access to applicable systems and tools could have a significant impact on IT architecture to manage. This will require a certain effort.

The transformation will impact on people, competence and work content and a collaboration across borders with trade unions and other impacted stakeholders is key to enable the change.

succeed with the transformation

Not a quick fix - The transformation into an intelligent factory with autonomous teams is neither easy nor quick. There will be a need of patience and persistence to overcome fallbacks and allow the change to evolve over time

Step by step approach - It is recommended to make the change a step by step development process built on bottom-up involvement and engagement from the operator teams and to stay away from developing the change into a large change program with highly set objectives requiring extensive time and effort from all involved

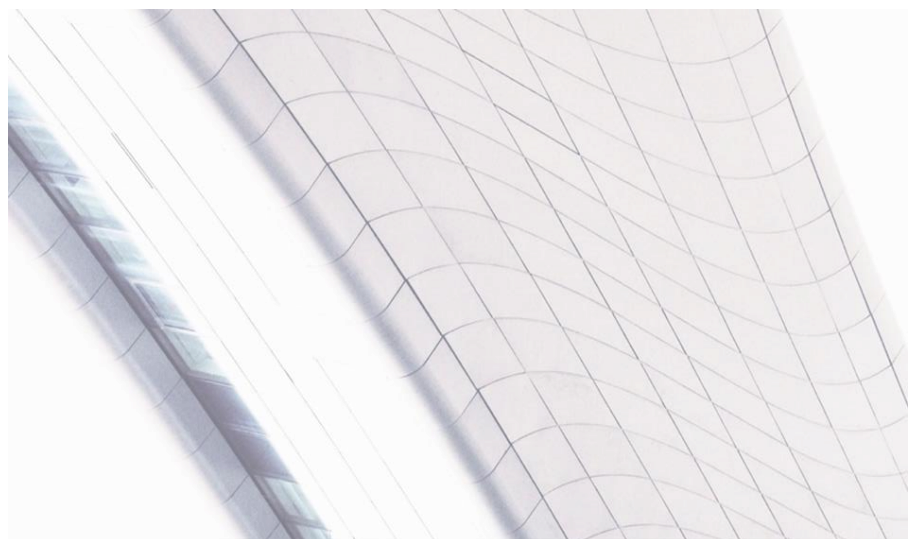
Management and Union commitment - Ensure to have management and trade union commitment for the change and with all impacted support functions and other stakeholders kept involved and engaged over time

Coaching leadership - Secure a leadership and a culture that will allow people to expand competence outside own area of responsibility and to dare to be bold and to challenge current structures

Keep organization informed - Information about the transformation journey need to develop both bottom-up and top-down to create awareness in the organization and to stay engaged. Use all good examples there are and build stories told by people

Are there any pitfalls related to Industry 4.0 and the transformation? If technical solutions are the key and only dimensions addressed, and if the people dimension is left out, the transformation will most probably fail due to that new technology will become a threat and we will miss out on all positive impacts.

Note: For this study Fortos has used a structural approach and framework together with a survey and a series of interviews.



WANT TO KNOW MORE?

Maria Ivarson

Partner People Development
& Business Transformation
maria.ivarson@fortos.se
+46(0)76-517 29 22

Robert Dejanovic

Partner Technology and Operations
robert.dejanovic@fortos.se
+46(0)76-517 27 90

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