

E-Learning – A tool for successful change

How to leverage e-learning for knowledge sharing in the manufacturing industry



Today's global trends, such as high speed of innovation and technological change, require manufacturing companies to be agile and quickly implement sustainable changes to survive. To do so, companies need to continuously train employees to ensure they possess the right skills and know-how. The challenge is to do this in a cost-efficient way or, in other words, find the most suitable format for conveying knowledge and information. The solution in the new digital era is, in many cases, e-learning – a training method which, during recent years, has become significantly simpler and less expensive to use.

E-learning enables effective learning

E-learning leverages slide shows, videos, gamification and simulation to create interactive discussions and knowledge sharing in digital format. It is a quick and flexible way to train a large number of employees, independent of physical location and time, and create attractive opportunities to effectively drive changes within an organization. By using interactive quizzes and tracking methods, e-learning has been shown to increase motivation and learning engagement while making it possible to follow up employees' results, ensuring everyone completes their training modules and gains the essential knowledge. Additionally, with digital material it is easier to maintain and make central changes to the learning material compared to traditional non-digital formats, keeping it updated at all times.

Research shows that e-learning, when replacing traditional instructor-led training, can reduce instruction time by up to 60% and costs by at least 50%. Organizations report e-learning as the second most valuable training method, and over 42% of global Fortune companies use some form of technology to instruct employees during formal learning hours – a number which is projected to increase¹.

One form of e-learning is massive open online courses (MOOCs), which are online courses with unlimited participation

and open access via the Internet. Participants can be from both inside and outside the organization. In addition to traditional course material such as filmed lectures, readings, and problem sets, many MOOCs provide interactive user forums to support community interactions among students and teachers. MOOCs have shown positive results, illustrated by a survey by *Harvard Business Review*, with 72% of respondents reporting career benefits and 61% reporting educational benefits as a result of MOOCs.

E-learning has shown gains in nearly every sector and is currently growing at a rate of about 9% per year. Reasons for this rapid growth are both demand – the increasing need for knowledge – and supply; as technology has become cheaper, simpler and more available, the possibilities for e-learning have grown.

With today's high speed of change, manufacturing companies are facing a significant gap between the knowledge they need and the knowledge they possess. Arthur D. Little's experience is that e-learning is a cost-efficient way to reduce this gap and enable continuous, lifelong learning. Research shows that about 96% of employers believe continuous education has a positive impact on job performance².

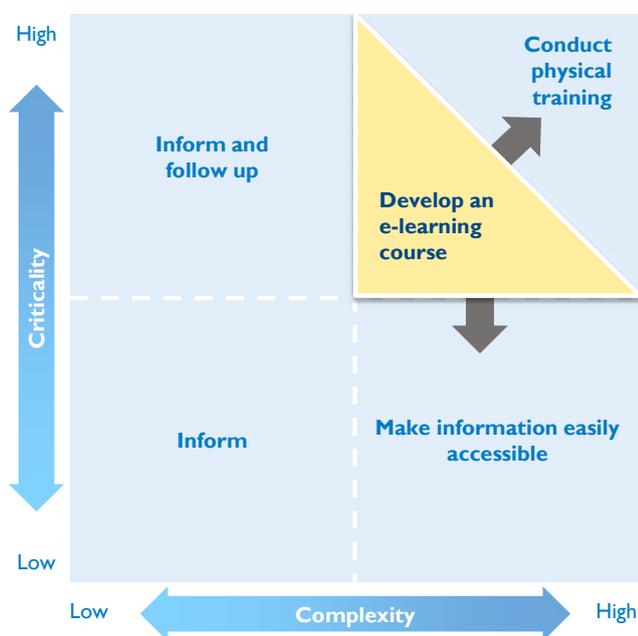
¹ <http://elearningindustry.com>

² Lifelong Education and Labor Market Needs, EvoLLLution, 2012

Applicable learning format depends on characteristics of the information

A key question when having information to convey is which method is the most suitable. As methods have different advantages and disadvantages, the most efficient option clearly depends on the situation – and, in particular, the piece of information. Arthur D. Little has developed a framework with two key parameters for selecting which method to use for conveying information: criticality, meaning both how important the information is and the number of affected people; and complexity, meaning how complex it is to grasp and understand. The reasoning is shown in Figure 1 below:

Figure 1: Matrix indicating where e-learning is best applied



Source: Arthur D. Little

For information with low criticality and low complexity, affected parties can simply be informed (e.g. by e-mail). If the information has low criticality but high complexity, it is appropriate to make the information easily accessible, for example, by making it available on the company intranet. Information with low complexity and high criticality needs to be actively communicated to the target audience and combined with follow-up activities. Information with both high criticality and high complexity needs to be taught to the target group in order to ensure that it is fully understood and grasped.

E-learning is an excellent substitute for physical training unless the information has both very high criticality and very high complexity. In this situation physical training is unbeatable, as physical presence enables complete customization, which is required to convey this type of information.

Going forward, Arthur D. Little sees that use of e-learning will increase; it will continue to replace physical training as well as other methods due to improved cost efficiency and flexibility.

E-learning for different target groups

Within the manufacturing industry there are several beneficial applications for e-learning to train people and drive change. Potential target groups are internal work force, customers and partners, as described below.

Training of the internal workforce, both blue and white collar, is suitable when launching new processes or products. E-learning is also valuable for sharing knowledge within the company.

E-learning is a powerful tool to help customers realize the full potential of the offered products and services throughout the product life cycle. Arthur D. Little's experience is that customer satisfaction will increase, and that it strengthens the manufacturers' relationship with its customers. One example of a manufacturing company providing e-learning for its customers is Sandvik Coromant, a global supplier of tools, tooling solutions, and know-how to the metalworking industry.

For partners, such as service providers, component suppliers and maintenance companies, e-learning is an efficient option for continuous knowledge transfer. Supporting these actors is a powerful way to improve customer satisfaction and reduce costs throughout the value chain.



Success factors when implementing e-learning

Arthur D. Little has identified four key success factors when implementing e-learning, shown in Figure 2.

1. Develop a clear strategy covering when and for which types of information e-learning should be used. As part of the strategy development process it is crucial to investigate problems the organization experiences with current learning practices. Examples of problems include employees not completing their trainings, low engagement and small or no effects.

Figure 2: Four key success factors when implementing e-learning



Source: Arthur D. Little

2. Ensure user-friendly interfaces for users and administrators in order to simplify usage and continuous updating of the learning material.
3. Apply usage incentives and follow-up systems to make sure e-learning is prioritized among the employees. It is powerful to develop courses for specific roles, as well as to implement certifications.
4. Align with existing training activities and knowledge management systems. Start with a list of e-learning priority areas focusing on “must-have” functions rather than “nice-to-have” ones.

Conclusion: E-learning as part of blended learning activities

In order for manufacturing companies to respond to today’s high speed of change and knowledge gap, continuous lifelong learning will be crucial. E-learning will play a key role as it creates effective and efficient opportunities for organizations to improve learning, and to drive change and build relations both within and outside the organization. To secure sustainable results, organizations have to understand the situations in which e-learning should be used and how to combine it with physical training.

Case example: Efficient global roll-out of new ways of working with the support of e-learning

EngineeringCo is a world-leading engineering company which, during the last decade, has succeeded in continuously introducing new innovative products. The company has a culture of innovation and reinventing itself, which is strongly anchored in the board and executive team. As it is a global organization, the challenge for EngineeringCo was to improve and globally align its product planning, research and development processes.

An ambitious program was initiated which developed new global processes and ways of working. The new global processes for planning, research and development were described in a formal process document and registered in the quality system. Having the formal document in place, the real challenge occurred: how to transform the ways of working and gain benefits from the new processes in the global organization?

Two e-learning modules were created with the purpose of introducing the new processes, roles and link to the overall company vision. The company had an in-house e-learning department which developed the e-learning modules in close collaboration with key project members who had designed the processes. The modules were interactive and developed in a standardized format, and explained the new processes in different ways.

Each e-learning module could be completed in 15–20 minutes and included 5–10 mandatory questions at the end to ensure effective learning.

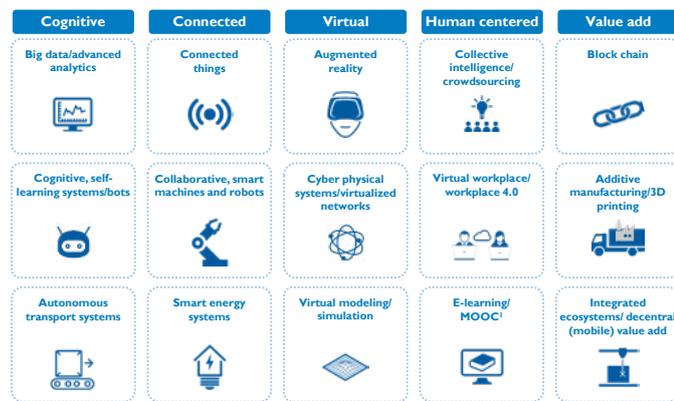
Over 1,000 engineers, product managers and executives were enrolled in the course with a clear deadline to finish. Managers on all levels were clear on the call for change, and the vast majority of employees prioritized and performed the e-learning modules. In addition, global webinars and information through managers were given to allow interactive discussions for those with questions. Managers could also easily follow who had completed the training, who had started, and who had not started. As a result, managers were able to take necessary mitigating actions for those who had not succeeded in completing the courses.

In summary, by using the two e-learning modules as the foundation in the implementation, EngineeringCo was able to rapidly deploy the new joint processes in the global organization in a cost-efficient way.

E-learning as part of Future of Operations

E-learning is part of Arthur D. Little's concept, Future of Operations, offering great opportunities to leverage the benefits from digitalization and new technologies in order to accelerate and streamline all kinds of operations processes, such as R&D, procurement, production, logistics and customer relationship management. The concept consists of 15 technological building blocks, as seen in Figure 3.

Figure 3. Arthur D. Little's technological building blocks



1 Massive open online Course
Source: Arthur D. Little.

Industrial leaders are already pursuing varieties of global transformation initiatives driven by digitalization. E-learning is one of the key elements when it comes to scaling up these initiatives, enabling fast and efficient capability building among the workforce, and thereby ensuring fast payback times for corporate investments.

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Arthur D. Little

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