How to transfer knowledge and experience from the old to the young?

There is an ageing workforce in the chemical industry, which means that the knowledge of "older people" is slowly retiring. Between 2005 and 2016, the proportion of employees over the age of 45 in the Netherlands increased by approximately 15 to 51 per cent of the total workforce (source: CBS). This development is also taking place in other Western European countries.

The increase will continue over the next 10 to 20 years until this population group has retired and the knowledge threatens to dissolve. The question with the industry is then: "But how do we still arrange our processes if we no longer have any knowledge about them?"

Knowledge transfer seems to be a solution but is challenging to implement due to time constraints. With highly specialized work processes, there are no direct training courses, and a master-mate relationship is relatively labour-intensive and requires proper mentoring that is not a given for every person.

There also seems to be an increasing disconnect between the generations. Whereas in the past, people just "knew", the current generation is more focused on looking up information. People also quickly come to misunderstanding when the younger person says, "Let me Google that".

The current generation is used to dealing with an abundant digital information supply and assumes that everything can be found.

This "disconnect" is growing with the changes within the manufacturing industry. The increasing digitization is causing changes in established routines and habits. There are apps or portals for everything where previously clipboards were used. This makes the old guard uncertain. "It also worked in the past, and what happens if a computer fails? In the past, you were taught that people did the work, not computers and machines! "

With far-reaching automation, it is not clear who is responsible or what you should do if this automation fails. It remains awkward to entrust the core business of an organization to automation, certainly if this has never been done before.

The keen reader among us may have noticed that the problem intrinsically entails a solution. First of all, younger generations can handle digital information well. Furthermore, we have established that the older generation carries an enormous amount of knowledge and skills in their "way of doing things". So you have to record what the older guard does! Not by transferring it to an individual, but by moving it to a digital system. A special kind of database that can store all this well and can summarize valuable insights. It is essential to realize that this also costs time and money and that the current processes must not be disrupted. The challenges are not at the level of the specialists. After all, they can do all their work. It is interesting for management to gain insight into "their" business processes, knowledge and skills. That is their role within the organization.

Condition Based Monitoring or CBM is an example of this. By digitally measuring and statistically interpreting your data, you get new insights that both the old and the younger engineer can judge. The assessments of these data by the older engineer are based on knowledge and can be saved for future generations. By collecting these assessments, you gather the knowledge and skills of your organization, and you can also transfer this knowledge to the new generation. This information not only serves knowledge sharing but also provides insight into the quality of the insights gained. The process within the organization is self-learning and self-evaluating because it intrinsically strives for the "best" knowledge and has users (young engineers) who provide continuous feedback.

Digitization is therefore not only to "manage" information but also to organize "excellence", to train your staff, to offer contingency and to put the best product on the market.

About the author

Pieter Geelen works as a Data and Technology Manager for Sitech Services. This company was established in 2008 at the Chemelot chemical site in the south of the Netherlands, but has a long track record as it originated from the service departments of former DSM's divisions. Nowadays Sitech helps companies in the process industry, the chemical industry and the energy sector, to grow and develop by supporting them with their unique services and the latest technologies, using expertise, innovation and extensive digitization as tools.