

York Refrigeration

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This case description is based on a report from August 2005 on “Impacts of E-learning – Five Business Cases” produced by Ramboll Management A/S (Denmark) and commissioned by the Danish Ministry of Science, Technology and Innovation. The full report is available (in Danish) at www.vtu.dk/fsk/ITC/EffekterafelaeringFembusinesscases2005.pdf

The case is also based on further telephone and e-mail communication with Per Schou-Nielsen.

1. Facts about the institution

Name of institution	York Denmark, a subsidiary of York Refrigeration, which is a Johnson Controls company.
URL of institution	www.yorkref.dk/index.asp?Site_Id=49
Country	The training initiative is located in Denmark. The company has training centers in the United Kingdom, France and Germany.
Number of Employees	220 in Denmark
Revenue in 2005	Revenue for York Denmark not available
Experience with e-learning since	Since the 1990s
Business sector	York Refrigeration is a subsidiary of York International Corporation, a global concern within heating, ventilation and refrigeration.
Target group/participants in e-learning	The primary target group is the company's 2000 service technicians. The secondary target group is the company's 100 customers.
Content	Training installation of cooling systems and reparation of cooling system components.
Form	Web-based e-learning used in conjunction with classroom and workshop training as individual learning and as manuals and documentation.
People interviewed	Per Schou-Nielsen, Director, Training and development Palle Martin, Vice President, HR EMEA Kurt C. Hilbrecht, Tutor Paul Homsy, Head of Refrigeration and Air Handling at Nestlé (Customer of York Refrigeration)

2. How the institution used e-learning

2.1. The courses

The training initiative at York Refrigeration in Europe, the Middle East and Africa (EMEA) is situated in Denmark. There are training centers in Århus (DK), Manchester (UK), Nantes (FR) and Mannheim (D).

The primary target group for York Refrigeration's e-learning initiative is the company's 2000 service technicians throughout EMEA. The service technicians need both a general overview of complete systems and more detailed knowledge of how the components function and can be repaired.

The secondary target group is the company's customers, who need basic knowledge about the products they have bought and how they should be maintained.

As a part of the training initiative, York Refrigeration developed instructional VHS-videos in the 1990s. These are now digitized and available on web and CD ROM. In 2003, new e-learning content for system training was developed. It deals with system circulation and components with focus on known challenges and maintenance issues. There is for example a video from the Brabrand Dairy, which demonstrates the circulation in a water-cooling system. (Figure 1). The e-learning modules include video clips, narration, drawings, text and access to further documentation. It is possible to navigate freely between the topics.

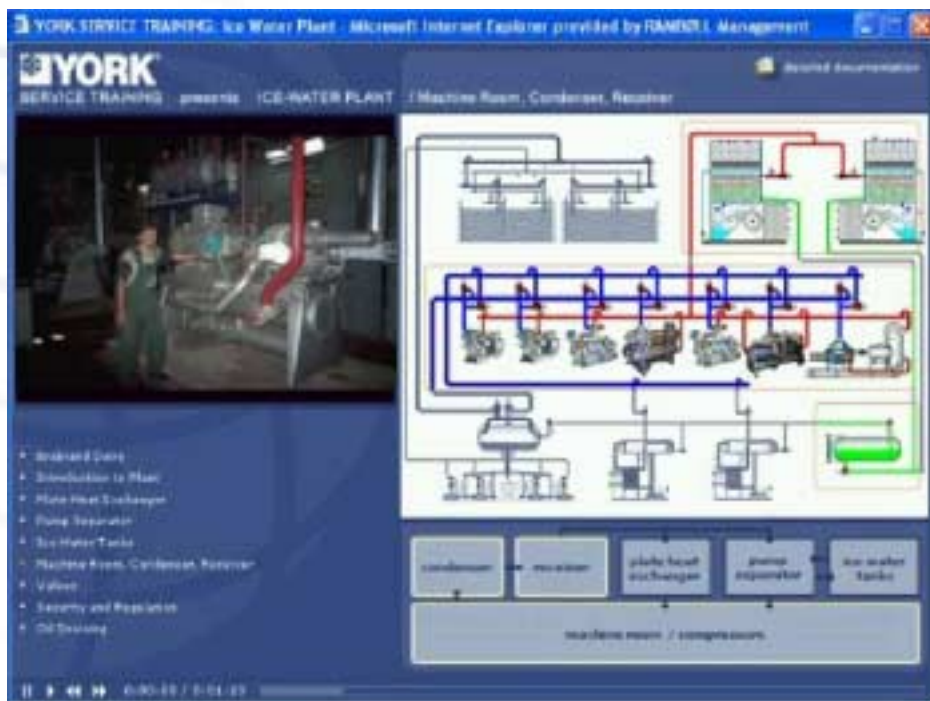


Figure 1. E-learning module showing the water-cooling system at Brabrand Dairy

The video "[York Icewater Plant](http://www.arken.com)" is available via www.arken.com.

The e-learning modules are used individually by the employees, as self-instructional training material, as introduction for new personnel, and as technical reference material and documentation. All modules are also available on CD ROM, and a list of revisions is frequently distributed.

The e-learning modules are used in the same way for customer training, and the customers may access the e-learning material after the training sessions. Nestlé, one of their customers, also provides the e-learning modules on its intranet.

2.2. Number of employees who have used each of the courses

There are no statistics available since all course modules are available to all employees, so there are no course enrolment or completion requirements. However, Per Schou-Nielsen estimates that more than 100 employees have used the BraBrand e-learning module. Altogether about 300-400 employees have used one or more of the about 15 e-learning modules that have been developed.

2.3. E-learning platform and technology issues

York does not use a Learning Management System, but a Content Management system named Media Builder from Arkena (www.arken.com). Per Schou-Nielsen is very satisfied with the system. He states that they use Adobe Premiere Pro for video editing, PowerPoint and Paint Shop Pro for graphics and slides, and Visio - for technical illustrations. They also use Question Mark to develop online tests.

The video content is handled by Arkena's Media Station Express (about € 5000) (www.mediastationexpress.dk) and a video camera (about € 1000). Per Schou-Nielsen explains how York uses these tools in a Danish video interview, which is available via (www.mediastationexpress.dk).

2.4. Course development

Per Schou-Nielsen states that there are three basic models in York's course development process:

1. We provide the manuscript and the technical illustrations and Arkena develops video and graphics. This is a very collaborative process in which Arkena also contributes ideas for audio and narration.
2. We develop the script and storyboard and engage an external video producer who also does the final video editing. We upload the video and publish it in Media Builder.
3. We develop the complete module in-house, especially when it is crucial to develop a module in a short time.

2.5. Course administration

The course administration is minimal since all e-learning modules are available to all employees all the time. This model requires no enrollment procedures, tuition fees, examination procedures etc.

3. Effects and outcomes of e-learning activities

3.1. Completion rates

Not applicable

3.2. Satisfaction

York Refrigeration has not made systematic evaluations of measurable effects, but the interviewed representatives report a positive response to the use of e-learning.

Better, deeper and broader competence development

E-learning is often used for ICT-training. This is however not the case at York Refrigeration. There, the e-learning focuses on training related to the company's

products. The training is intended to be hands-on and instructive. Still, e-learning is perceived as an important supplement to other training.

At York Refrigeration, e-learning is not viewed as an alternative to courses, but as an important supplement for further development and improvement of courses and competence development in general.

The tutor, Director of Training and Development, and Vice President of HR, maintain that the use of multimedia material is a strong point in e-learning. The use of video, not only text and graphics, makes the content more comprehensible for the target group. Tutor Kurt C. Hilbrecht emphasizes that: „It is important to apply several senses. Mechanics should not only read text, pictures provide a better view of the content.“ As a tutor, he emphasizes that e-learning provides more comprehensive knowledge and also supports a deeper comprehension of the composition and functionality of the individual components.

The e-learning is not only used during a course. It is also an important tool after the course when employees may access the modules to look up and reinforce the course topics. Experience shows that the printed service manuals are not frequently used because they are very comprehensive and complex. The video and graphics presented in the e-learning modules are more manageable. The tutor, Kurt C. Hilbrecht, points out for example that service technicians in the Caucasus, who only know a little English, still may benefit greatly from the videos and graphics. Further, months may go between times the service technicians encounter related reparations. It is then crucial that they swiftly and easily find relevant documentation. Director of Training and Development, Per Schou-Nielsen, considers though that e-learning as documentation is used less than desired, but that they still want to focus on the combination of e-learning and online documentation – in accordance with the company’s further development of a web-based infrastructure.

Vice President of HR Palle Martin also points out the time- and volume-related optimizations e-learning may provide. More employees may be trained in less time, and the potential target group increases considerably. Hence, the courses are not only available for participants at the course location, but also for remote employees that are not formally enrolled in the course. Palle Martin states that e-learning has made it possible to increase the training volume within the mentioned target group (2000 service technicians) by a factor of ten.

E-learning consolidates customer loyalty

When e-learning was introduced, the customers were included as a secondary target group. For them, the value of the e-learning initiative has a much larger potential and a much better effect than expected.

Through improved customer training, relations and sales have improved, explains Vice President of HR Palle Martin. Better customer training has also resulted in improved customer competence and therefore better utilization of products and purchase of additional services, since the customers better understand product potential.

Nestlé, a large customer, has utilized the e-learning offer. Mr. Paul Homsy, Nestlé’s Head of Refrigeration and Air Handling, considers York Refrigeration’s e-learning as some of the best e-learning he has seen. He also perceives it as valuable public relations for York Refrigeration. He views the e-learning offer as an important factor when choosing a provider: “ It is a must for a modern company to offer e-learning to its customers and its employees”.

4. Challenges and barriers

4.1. Technical issues

The availability of technology is still a central barrier and challenge. One tutor remarks that it is primarily in Western Europe that employees have access to portable computers, so that they easily can access the material when they visit customers. In Eastern Europe, for example, this is not the case.

To have full advantage of the material, all technicians should have access to computers, broadband Internet connections and basic ICT skills. This is still not the case throughout the organization.

4.2. Organizational issues

Increasing need for competence is an important impetus for e-learning

York Refrigeration's installations have a life span of 30 years. Over the years, many component suppliers have become part of the company. Therefore, the product spectrum the employees need to know about has become very wide. This requires a lot of the employees regarding professionalism and competence development.

Vice President of HR Palle Martin expects that this will accelerate in the future. He comments that the requirements for entering the cooling trade used to be very low, but he expects them to increase. He wants more focus on competence development and regards this as a pivotal competitive issue for York Refrigeration in the future – both to meet external demands and to acquire the best possible employees. By offering employees good and continuous competence development, York Refrigeration may come through as a more attractive employer than smaller enterprises. Through e-learning, it is possible to secure faster and better competence development for more employees. Therefore e-learning is included in York Refrigeration's strategic plan for training and development.

Barriers and special challenges

The executives at York Refrigeration have supported the e-learning initiative. Per Schou-Nielsen, Director of Training and Development, still considers that it has been a challenge to acquire acceptance for e-learning in the organization. He regards internal marketing of e-learning as an important challenge. Even with support from top management, there is a need for internal marketing.

4.3. Other issues

E-learning integrated in future strategy for training and development

York Refrigeration has just started to develop a strategic 5-year plan for training and development, in which e-learning will be included as an integrated part. Experience has improved the organization's comprehension of the opportunities and challenges e-learning offers. Therefore, the kind of competence development to be offered and the methods to be used, will clearly emerge. It is expected that the use of e-learning will increase during the next few years.

Digital tests have already been piloted and further application is planned. The aim is that employees in the future may be certified by passing tests in various relevant topics. This is included in a strategy for improved professionalism for employees.

5. Success factors

Per Schou-Nielsen points out the following seven success factors:

1. E-learning is expressing a new way of delivering competence development, including product knowledge, system understanding and a potential for discussing business needs and challenges. Whenever a user remarks that the module is an eye-opener and enables him/her to connect to one of the larger parts of our business, it's a success.
2. We have seen that the combination of online delivery, video, narration and illustrations supports a more visual learning style efficiently. Our audience - the service people - is hands-on and visually oriented: reading is not their preferred style. The e-learning module addresses one of their key learning styles and many of them say: Please do more. That's part of our success.
3. People from other branches in our organization, from the back office, administration etc, have told us that they suddenly understood what this kind of YORK offerings was all about. Internal communication that results in a broader understanding = success.
4. A customer (Paul Homsy) tells us how great this module is and that such material can have high importance in sales negotiations. A satisfied customer is always a success factor.
5. The use of training for improving business and retaining customers adds a new angle to the organizational understanding of Training and development.
6. The module expands mind-sets. It helps us reduce the mental barriers in our organization: Training (and the expected outcome: Learning) is not restricted to a classroom session. Using online tools to enable your ability to reflect on certain issues will improve our competence and create better solutions for our customers.
7. Having a common experience, having a concrete example is worth its weight in gold. We do not start new discussions from scratch but use this module and others created in the meantime to build upon. I see a future where we (Training and development) support our organization through "online educational TV".

6. E-learning investments, developmental costs and operational costs.

The e-learning initiative is perceived as very inexpensive.

The institution has not conducted an overall calculation of developmental costs. However, Palle Martin, Vice President of HR, estimates the total developmental cost, including video productions, to be about € 125 000. For the module presented in figure 1, the developmental cost related to external assistance was about € 13 000.

The aim has been to minimize the developmental costs. However, the productions include both high-end productions that are presentable for customers and low-end productions in which swift production time is decisive. An authoring tool was chosen, which makes in-house development easy and inexpensive.

Palle Martin, Vice President HR, and Per Schou-Nielsen, Director for Training and Development, consider the investment to be minor compared with the outcome. Palle Martin states: "The e-learning investments have been peanuts compared to the outcome".

York Refrigeration has a very distributed workforce, which means that e-learning can reduce the training costs. Air fares and hotel costs are major costs when service technicians from for example Italy and Spain attend courses in Denmark. Loss of work hours during travel and course attendance is a large additional cost.

Developmental costs

In total, about € 120 000 have been invested in e-learning. The latest production amounted to € 12 500 plus use of internal resources.

Operational costs

Operation costs about € 600 per month for media and the web hotel. The product is also distributed on CD ROM to locations with no or poor access to the web.

Direct effect/outcome

Not calculated. Estimated to include savings related to travel costs and loss of work hours.

Indirect effects/outcome

- Improved development of competence and customer loyalty.
- Increase of sales of other services.
- Preparation for handling increased need for competence.