

# Measuring e-learning readiness

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**Key words :** *e-learning, e-readiness, measuring e-readiness*

## **Abstract:**

*E-learning is a good opportunity for companies to up-skill their employees to meet the demands of lifelong learning but the implementation of it needs to be well prepared and managed because it takes often high investment costs. That is why it is important for a company to know if it is e-ready. E-readiness is already well covered in literature and several models are suggested. We used these models to develop an e-learning readiness measurement instrument. We used our instrument to check whether the Flemish hospitals were e-ready for e-learning.*

## **1. Introduction**

The promises of e-learning for organisations are multifold. Too often they fail to take effect. The reason is a not sufficient readiness to take up e-learning in an organisations and absorb the innovation effects coming along with it.

In the globalised world of the 21st century, organisations are confronted with a challenging economic competition. Employees need to be equipped with new competences to adapt to constantly changing work and life conditions in knowledge-based economies and societies. Organisations are aware of the value of knowledge and learning for their continual development and for the acquirement of a competitive advantage, which relates to innovation and fulfilment. Especially the healthcare sector is a fast changing environment and it is clear that its performance depends on the ability of staff to update their competences fast in order to adapt to a constant changing environment (S.Psycharis 2005, Bernhardt et al., 2003). Looking at e-learning in today's organisations, it can be defined as the delivery of instructional content or learning experiences enabled by electronic technology and it is one of the major innovations that is diffusing corporate settings. E-learning requires that the learners use the internet, collaborate with peers and interact with the trainer for support. Experienced e-learners can even use technology to monitor their training and ultimately become responsible managers of their own personal and career development. The number of e-learning initiatives in corporate training scenarios is steadily increasing. Reasons are related to the cost of training and reports show that e-learning contributed to saving travel costs and downtime for workplaces. Advantages such as asynchronous training, training at individual pace, just-in-time training, and cost-effectiveness lure organizations to e-learning (Powell 2000). The opportunity to learn via technology presents an exciting prospect to train even learners with

little previous access to computer-based training. E-learning is a good opportunity for organisations that deal with fast changing knowledge but companies need to be well prepared because it takes often high investment costs.

## **2. e-learning benefits and barriers**

### ***2.1 how can companies and employees benefit from e-learning***

First we see the employees' satisfaction thanks to the easier access to knowledge/ training, a better career growth opportunity and employee flexibility in learning.

Second we see the increased innovation of the company thanks to increased sales, faster time to market as an indirect result and realtime collaboration facility.

Third we see a high level of operational efficiency thanks to time savings as a result of more streamlined and increased levels of training and reduced training hours.

Fourth we see important cost savings thanks to lower travel costs, infrastructure reduction, less materials duplication.

### ***2.2 companies' barriers to e-learning and knowledge sharing***

Several barriers were already identified to learning. Learners need access to learning activities in their own language. If not there is a large language barrier to adoption and a high probability that the learning activity results will be sub-optimal.

Employees have often multiple roles and responsibilities. It is hard for them to dedicate time and attention to learning for a long enough period to be effective.

The company's focus is often on short term results while learning objectives are often longer term.

Customised learning activities and e-learning content are expensive and as a consequence often the more generic content that has been delivered to the employees is not suited to their needs.

### ***2.3 e-adoption of companies: the conclusions of a study***

In Hasselt University we organised a questioning of companies about their ICT maturity, the use and integration of advanced ICT facilities in their business processes.

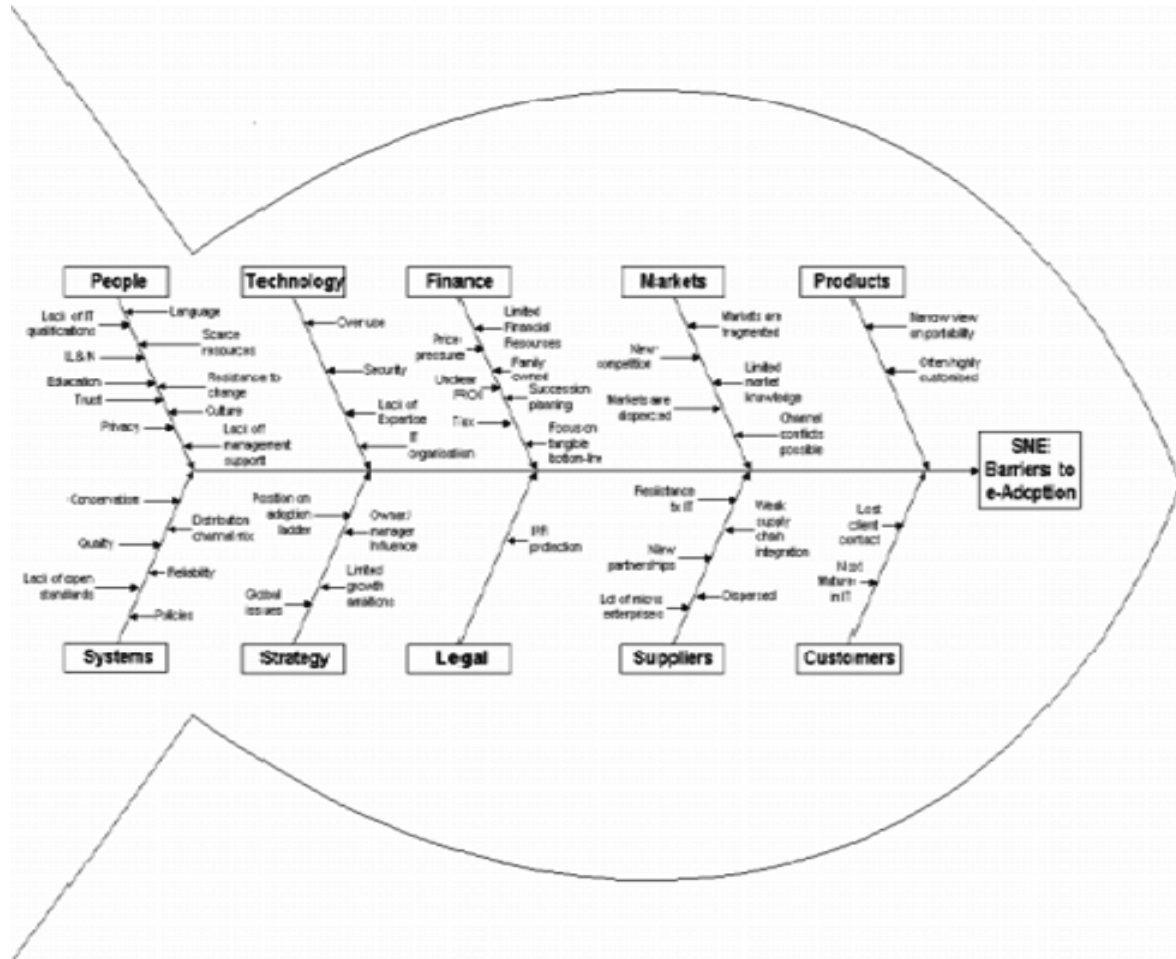
About the e-adoption we could conclude that especially the SME's have not yet adopted internet on a high level, compared with the well known adoption frame.

The companies express their belief in the power of internet but evaluate their solutions as being not useful, of low quality.

The reason they gave us is not the expected financial one, but in the most cases the missing expertise in the company to initiate this kind of projects.

## 2.4. e-LIVE model of barriers to e-( learning) adoption

In the frame of the European project e-LIVE (The eLIVE project, as a Thematic Network, is one of the key measures funded by the European Commission Go Digital programme to assist European SMEs) IBM reported about a model of barriers to e-learning adoption.



The model can be applied to figure out the barriers a company can experience when it is implementing an advanced and competitive system.

## 3. e-learning readiness and models to measure it

### 3.1 Definition

Organizations have to be ready to adopt e-learning and benefit from its advantages. Such *e-readiness* can be defined as “how ready the organisation is on several aspects to implement e-learning”. E-learning-readiness should be determined before organizations introduce e-learning. Readiness includes learners’ ability to adapt to technological challenges, collaborative training and synchronous as well as asynchronous self-paced training. It also depends on their motivation and their discipline to learn in a self-driven mode and to respond

to online instructions. E-readiness makes up the e-maturity of the organization which also is represented in the readiness of learners. It includes the availability of infrastructure, clear training objectives, trainer support and guidance and knowledgeable leadership. Therefore, e-learning not only requires readiness from the learner but also from the trainer and the organization to successfully engage e-learning (Bowles 2004).

### ***3.2 e-learning readiness assessment and measurement models***

Literature on organizational readiness for e-learning provides managers with questions, guidelines, strategies, models and instruments for assessing the readiness of their companies. E-readiness can be assessed by evaluating an individual's technical experience and competency to interact with computers. This competency should be supported by the individual's capability to direct his or her own training through appropriate knowledge, skills, attitudes, and habits. Aydain and Tasci (Aydin, 2005) suggests a questions tool with 7 categories: human resources, learning management system, learners, content, IT, finance and vendor. Another categorization results from *Chapnic* (Chapnic 2005): psychological, sociological, environmental, HR, financial readiness, technological skill (aptitude), equipment, content readiness.

How to find a comprehensive concept to measure the e-readiness of organisations? Which criteria can be included? If we examine the models that can be find in literature closely, we see certain common parameters that always come back. Also Psycharis suggests three large categories (Psycharis 2005): resources, education and environment. Each category contains certain criteria. In the category resources the technological readiness, the economic readiness and the human resources readiness are investigated. Education means the readiness of content and the educational readiness. Environment includes entrepreneurial readiness, leadership readiness and readiness of culture.

- **Resources:** First of all we want to investigate the **technological readiness**, about the available technological systems that are provided and the way they are used. The **economic readiness** examines the willingness of the organisation to invest in e-learning. Implementing e-learning brings along large costs and the organisation needs to be prepared to make the necessary investments in infrastructure but also foresees a degree of administration support. The **human readiness** refers to the knowledge and the skills of the employees being the e-learners. An important question is if staff has the necessary basic skills and if they do feel at ease with used technology, necessary investments in infrastructure but also foresees a degree of administration support. The **human readiness** refers to the knowledge and the skills of the employees being the e-learners. An important question is if staff has the necessary basic skills and if they do feel at ease with used technology.
- **Education:** Whether or not an organisation is ready from an educational point of view will be determined by the measurement of the readiness of the content. Is the educational content easily available, is it structured good and is it reusable? But also the educational readiness is important. It is about the learning styles and the educational needs of the employees.
- **Environment:** The criteria of this category are the entrepreneurial readiness and the readiness of the culture. So the Flemish hospitals of our case all have their own authority on decision making on how how they train their staff.

### 3.3 Our e-learning readiness measurement instrument

Studying the already existing theory and using our insights of e-learning and quality aspects of e-learning we developed an e-learning readiness measurement instrument. A self assessment questionnaire has to be built on it. This questionnaire can slightly be changed, and adopted according to the sector in which it is used – if necessary.

We developed a questionnaire and used it to measure the e-learning readiness in the hospitals. We developed a set of questions based on our self assessment quality questionnaire (Schreurs 2008).

Our instrument consists of enabling or delivery criteria and of results criteria. The enabling criteria are about the creation of the environment in which e-learning can be implemented. It is about the preparation of the learners and about management of learning in the organisation. The results criteria are about the level of being prepared to implement e-learning in the organisation. It is about the learner characteristics, the availability of technological facilities, the investments done by management and the quality of the e-learning solutions and processes themselves.

#### The enabling criteria

##### 1. Enabling the employees/learners to participate in an e-learning course

- Assessment of learners competence
- Assessment of preferred learning style
- Motivating employees
- Organise and manage procedures and processes to share knowledge and experience in learning
- Optimise the learning process and the role of e-learning in it.

##### 2. Training activity in the organisation is a management issue

- How training is valued in practice
- Time allocated to training
- Learning culture
- Evaluation of the impact of training

**Figure1:** enabling criteria of the E-learning readiness measurement model

#### The result criteria

##### 1. Learner characteristics

- ICT skills of the learners
- Internet experience of the learners
- Motivation for use of e-learning of the trainees
- Do they have a preferred learning style? (prefer presentations including audio, video, ....)

##### 2. Availability of qualitative

##### 3. Organisation and management of e-learning

- Investments in physical environment, good user systems and in e-learning infrastructure
- Learning time during working hours?
- Preparatory training in usage computers and internet

##### 4. E-learning process and solutions/

technological facilities for e-learning	courses
<ul style="list-style-type: none"> <li>• User ICT infrastructure</li> <li>• The internet connectivity</li> <li>• Flexible Learning management system to handle webbased materials</li> <li>• System to connect learners together</li> <li>• Tracking the learning activity</li> </ul>	<ul style="list-style-type: none"> <li>• Organisation of the e-learning activity</li> <li>• Training in using e-learning system</li> <li>• Support of the e-learning activity</li> <li>• Information about available e-learning courses</li> <li>• User friendly system functions facilitating learning activities</li> <li>• E-learning course content and presentation</li> <li>• Level of personalisation of learning</li> <li>• Matching of course with learning style</li> <li>• Matching of course with job requirements</li> </ul>

**Figure2:** result criteria of The E-learning readiness measurement model

#### **4. Case AGFA Healthcare: application of our readiness measurement instrument**

Agfa HealthCare is a leading provider of integrated IT solutions and state-of-the-art diagnostic imaging for hospitals and other healthcare centres.

The mission of Agfa Healthcare is to support the transformation process to ICT solutions being improving the medical care services of the hospitals. Recently Agfa Healthcare provides e-learning services to its customers, the hospitals. All ICT solutions will be complemented with an optional e-learning component. The e-learning component can be accessed via an e-learning portal of Agfa. By the way the hospital can also change from traditional classroom learning to e-learning. Agfa is convinced of the advantages of using their e-learning solution for the hospitals, replacing the traditional classroom learning they offer now.

But are the hospitals ready to change to an e-learning solution?

In collaboration with the company Agfa Healthcare, we were investigating the e-learning readiness of 10 Flemish hospitals being the customers of Agfa. We developed a questionnaire of 80 questions that should assess the e-learning readiness of the hospitals on several aspects. We based this questionnaire on our e-readiness measurement instrument.

We have concluded about the following e-readiness criteria: the required learner characteristics, the availability of qualitative technological facilities for e-learning, the organisation and management of e-learning, the e-learning processes and solutions/ courses, the enabling of the learners to participate in an e-learning course and the management issues about the training activity.

## Conclusions

E-learning is a good opportunity for companies to up-skill their employees to meet the demands of lifelong learning but the implementation of it needs to be well prepared and managed because it takes often high investment costs. That is why it is important for a company to know if it is e-ready.

The article shows that e-readiness is a helpful measure for organisations to determine their state-of-readiness to employ the benefits of technology enhanced learning for their employees.

The instrument we developed has already been tested in the measurement of e-readiness in the healthcare sector. It seems to be very useful and flexible to be customised to other sectors too.

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