E-LEARNING MODEL PLATFORM WHICH STRENGTHS MANUFACTURING AND DISTRIBUTING PROCESSES IN AGRI-FOOD SME IN THE REGION

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Summary

In the paper e-learning tool assumptions which determines strengthening process of manufacturing and distributing processes in agri-food SME in the region were studied. One can observe that both technological aspects and learning objectives should be considered to create effective e-learning tool. Learner educational needs and their technical and organizational resources should be considered in a selection of e-learning type. In other side possibilities of teaching/training institutions should be also defined clearly to be successful in teaching process. Presented case study shows e-learning platform assumptions to strength TOWARDS project regional sustainability strategy. One can see a need of creation of differentiated content for different groups of learners. The outcomes over participation and bringing e-learning users their own input information will enrich the module and will be possible thanks their contributions.

Keywords: e-learning tool, platform, technology, goals, active users

1. Introduction

Decision about choosing an appropriate tools for e-learning program in cost effective manner is often not simple or easy because the decision is usually made by managers who have a little knowledge about information technology or by informatics who are not involve in educational processes directly and know little about educator’s requirements and needs. Today various e-learning solutions, especially those based on Internet platform are being used by persons without hard technical knowledge and they need a simple way for identifying various types of tools and evaluating different products which are offered on the market [6]. The problem becomes more and more complicated because of complexity of modern solutions has increased. Often the price and overall costs are important factors that justified our final decision except choosing one of free available solutions like Moodle or DoCoMo platforms (in opposite to commercially available Blackboard or Clix). Not less important in this area is a problem of knowledge base creating for effective e-learning tool needs. It seems that a useful solution is networking concept of e-learning users participated in the platform not only as learners but also being simultaneously “teachers” who insert their knowledge and experiences to the e-learning platform. Such a way of interactive building of e - learning knowledge base satisfies condition of relevancy, consistency and trustworthy. Such knowledge is also up-to-dated permanently.
2. Choosing type of e-learning

First of all we have to give answer a very basic question: what type of e-learning we intend to implement in our education program? This is important for choosing solution that meets our as educators and students needs and requirements [8].

- E-coaching. It uses collaboration tools such video conferencing, instant messaging or other systems. Relationship, mentoring in its form is usually long term one. Mentor focuses on career development of learners who learn things beyond those written in handbooks. Online form tends to be more short term and contacts between learner and educator are precisely defined and limited to particular problems. This type of e-learning is appropriate for large and medium sized companies. Example of technology requirements: video conferencing system, internet connection and meeting system, server, e-commerce software (if necessary).

- Embedded e-learning. This is a type of just-in-time learning. Education materials or instructions are components of various applications, help files or Web pages and others. Embedded solution is appropriate for learners who must resolved their problems immediately. It may be Web based only or installed on user’s computer as tutorial materials. Example of technology requirements: multimedia and authoring tools, server, internet connection, web browser, help viewer.

- Facilitated e-learning. This is combination of Web content (typical for learner-led e-learning) with a system enable collaboration between students and instructors/educators. System is appropriate for students who prefer learning through discussion with others (combining class discussion forum with additional self-work such homework that must be completed). Facilitator does not teach or conduct learning directly but answers questions, helps solve problems and evaluates assignments. Example of technology requirements: multimedia and course authoring tools, web site authoring, server and internet connection, learning management and content system, discussion forum suite (not necessary when discussion forum is accessed via web browser), web browser and email program.

- Instructor-led e-learning. Platform uses internet technology to conduct traditional classes with distant learners, using video and audio conferencing system, chat, white boards. Educational presentations are transmitted with instructor voice together to distant learners computers. Learner may ask question by typing it into a chat or send it by email or use audio conferencing software. Learners must complete some homework. This type of e-learning has similar structure as traditional learning in the classrooms. Example of technology requirements: presentation software and authoring tools, audio and video conferencing software, server, fast internet connection, web browser, collaboration system.

- Learner-led e-learning (also called self-directed or self-paced learning). Course content is usually accessed by typical web browser like Explorer or Netscape and it is housed on Web server that enables to monitor student activity and freely access to many information and data resources via Internet. All instructions for students must be provide with main course materials together because there is no real instructor or facilitator who might help students in their endeavors. Also there is often no any mechanisms to allow communication or share knowledge or ideas between students and no time restriction. Example of technology requirements: multimedia and course authoring tools, fast internet connection, server, learning management suite, content management tool.
3. E-Learning content quality

Although technology plays an important role in delivery of online courses, real offline issues seem to be even more important – quality of content, administering distance learning or support for remote student [4]. Today quality of content still disappoints instructors and learners. Apart from that relatively large number of educators who choosing or implementing information technology do not really understand it correctly. They often make more or less costly mistakes in purchasing given solutions and sometimes in choosing technology that do not work correctly in particular cases. E-Learning content must be updated periodically in order to match current industry standards what shifts education quality to higher level, unfortunately many institutions still do not do it [8]. Many universities making efforts toward integration technology into their classroom but only partially. Some problems are caused by academic teachers habits to using traditional methods or insistence on using old models of professional development for introducing them to the information technology. When we think about implementation of distance learning system in our university considering the use information technology in broader context of educators, learners and learning environment is better than considering the use of technology alone. Technology supports our efforts in the e-learning field. We have to realize that e-learning can not to deliver only little more than ‘electronic’ workbooks accessed online what we may observe today in many cases. It should be focused on scoring, tracking, outcomes monitoring and courses sequencing rather than delivering of education materials in form of content libraries that are some kind of bookshelves in traditional library or simple set of many coursewares (learners often failed to complete this type of online courses) [3].

4. The models of international e-learning cooperation in the field of higher education

Distance learning platform enable us to start cooperation with foreign higher education institutions and design interesting mutual teaching programs and courses. We may choose one or more of five different collaboration models that will be most appropriate for us and for our partners:

- **Complementary articulation.** It is appropriate when two universities offer similar degree education programs with some unique modules or specialties that expand an option available to students. Student may matriculate at one university and has opportunity to take some courses/modules at another one. For example, institutions offer logistics but one of them has medical logistics as specialty and another one offers general logistics. Student may study logistics in one of them and some of modules in another meeting their degree requirements. The result of this type of collaboration is that both universities could offer a broader range of specializations. Student can choose admission to the university from which he or she wants to earn the degree. Intellectual properties are not exchanged among institutions involved and student pays tuition per module.

- **Fully articulated degree.** Two universities start collaboration for development a single mutual degree education program. One institution can not offer the degree in its entirety. Student is matriculated at any chosen institution but must take modules from both participating universities to complete education program. Single institution has not ability to offer entire education program. Universities must agree on admission requirements or standards. Student may admit into the chosen higher education institution. This model requires a very high level of
cooperation – success depends on both of them. Each university is responsible for intellectual property for modules offered. However cross licensing agreement is possible. For example: two universities develop one program in public health and each of them offers an agreed part of modules.

- **Collaborative course development.** In this case two or more universities agree to cooperation in the development of courses that could be used by one of them to offer a program at a distance learning form. Collaborating institutions may implement the course materials in their own education program but only one of them offers degree. Student must admit to university that offers degree. Collaboration may not be visible to a student. Participating institutions get access to all education materials and use them in their own program. University responsible for the final form of education materials has responsibility for intellectual property. Incomes are generated by institution that offers the degree and participating universities benefit by having access to education materials.

- **Shared marketing.** The case in which two universities offer complementary degree programs in related fields that constitute reputable collection attracting attention on the international higher education market not achieve individually. Student may seek admission to the institution that offers most attractive program. Education institution agree to start co-marketing their own programs and must be able to delivery of their programs to students at a distance learning.

- **Client partnership.** In this case two or more universities may serve their common client, such as big corporations, government administration or public service institutions and ensure mutual professional education for employees working in various distant places. Institutions cooperate to design and development education materials that include content specific to the client needs and requirements. For example, two universities, one from US and another one from Europe serve multinational corporation with Master of Risk Management. Each of them adapted course to its own curriculum in order to provide a comparable credential for American and European employees. Students admission is determined regionally – students are approved through their employers. Universities collaborate with a client to create a program that is tailored to the needs of client’s organization. Cooperation between higher education institution needs a certain degree of curricular flexibility in order to coordinate content of modules. Intellectual property developed but one institution is copyrighted by him and shared with partner through a licensing agreement. Formal agreement with the client corporation should be agreed and signed. Incomes are generated by both universities.

Presented above different forms of distance learning platform creation shows crucial role of well defined agreements between co-operators which carried out commonly teaching process including intellectual property rights protection, certification and accreditation aspects. Presented solutions can also be useful to create e-learning platform created by different kind of users like research, administration and business organizations.

3. **Case study on regional sustainability strategy strengthening in the frame of PR 6 TOWARDS project**

Structure of e-learning module for strengthening effects of agri-food SME platform obtained in the frame of TOWARDS project (made under the Sixth Framework Programme of the European Community (2002-2006) for the Project called TOWARDS FOOD-CT-2006-518702 Specific
Support Action Migrating networks from a producer TOWARDS a market orientation within the agri-food sector is determined through the project assumptions, goals and expected outcomes [1]. TOWARDS is a 24-month SSA project, whose main objective is to support, promote and rigorously research the migration of agri-food SMEs networks/associations from a producer&regional focus (traditional networks/associations) towards a market&European orientation (innovative networks/associations): from fork to farm approach. TOWARDS aims to help implement the ERA by strengthening main Food Quality and Safety Priority’s “from fork to farm” approach, directly relevant to agri-food SMEs networks/associations, in regions of Europe stimulating interregional co-operation with particular attention given to innovation aspects. Market & client oriented agri-food networks/associations pull SMEs to more rapidly assimilate innovation, what encourages growth and strengthens the competitiveness of the food sector in European and global markets. The goal of the project justifies its European nature, since best practices and experience is best gathered from similar networks in other countries. The project enrols 36 agri-food SMEs networks/associations (18 traditional+18 innovative), top-level experts including representatives of agri-food demand, regional&national public agencies, policy makers and professionals servicing agri-food sector. Firstly, TOWARDS creates a Migration toolkit to evaluate 18 traditional agri-food networks/associations enrolled and strengthens them supporting their migration into becoming more market&client oriented (development of Migration plans&strategies). Further networks strengthening are facilitated through the exchange of best practices previously identified in 18 innovative networks/associations enrolled. Secondly, TOWARDS creates an Agri-food Web Platform, sustainable beyond the project (Business plan), that involves and bring together around shared goals a range of agri-food players, carrying knowledge content and business information for agri-food networks and supporting their re-focusing towards clients. The project has an ambitious set of awareness creation & dissemination activities at regional, national and European level. Strengthening the project effects after its ending requires e-learning platform built up and keeping. The structure of e-learning model can be expressed in a form of questions and the answers like mentioned below.

**For who are destined education offer stakeholders:**
- food consumers wanting have guaranty for obtaining healthy food and its manufacturing processes being friendly for environment
- representatives of food raw producers and processors representing farms and food processing plants,
- representatives of central, regional and local government and self-government agendas being interested in solving social and economical problems in rural areas,
- representatives of social sciences investigating social phenomena and processes in macro and micro scale for needs of definition of rules acting in those areas and also to shape methods and tools useful for more effective management with agri-food SME.

**Objectives**

*Why agri-food SME can be a guaranty of healthy, tasty food not disturbing environment during its manufacturing:*
- technological aspect – not big farms can carry out non-industrial, ecological manufacturing methods of less level of intensity and concentration of chemical means,
- economical – small and medium farms burdens businesses with lower fixed costs,
- social aspect – smaller farms ensure more work places in rural areas because of smaller work productivity.

*Why SME ought to co-operate?*

- Agri-food SME in Poland and in other TOWARDS project partner countries are dispersed business units of small market power which can not face big food receiver requirements like financing promotional activities, leading knowledge transfer, ensuring themselves effective economical, technological and legal advisory, carrying out products certification, doing lobbying to obtain friendly for the branch legal regulations, giving services exchange, elaborating effective tools for management with horizontal and vertical integration processes, and also introducing networking management ideas resulted in a global trends and changes in a structures of economies of particular countries, regions and multinational groups. Agri-food SMEs can not compete in mentioned above areas with big corporation capital.

*Why agricultural producers ought to be more oriented on customer needs satisfaction and international markets?*

It is challenge of global economy, social marketing and competitors’ activity.

*Why SME agri-food sector organizations ought to use knowledge and best practices benchmarked from other similar organizations acting in at local, regional, country and European level?*

Benchmarking of marketing, financial and economical solutions is the cheapest positively verified by scientists and practitioners method of updating and developing business activity.

*What organizations can use elaborated methods for their management support?*

There are, as follows:

- branch farmer organizations – animal breeders and producers, fruit and vegetables producers, farmer cooperatives, not formal food delivery chain units (raw material deliverers, processors, distributors), wholesale markets, etc.

*What common the most important goals are integrating factors for mentioned above organizations?*

- similar manufacturing objectives and methods – breeders, catering and gastronomical firms,
- similar legal status and scale of activity – big farms leasers
- better usage of common resources – big farms leasers, strawberry breeders and producers, orchard producers.

*What strong and weak features have organizations associating different business objects in food delivery chain system (position related to end receiver of food):*

- raw material producers and breeders,
- distributors – wholesale markets,
- deliverers of food and food services for consumers.

*What strong and weak features have organizations associating different business objects in legal status system?* The answer gives knowledge base created on the base of TOWARDS project reports and publicity.

*What strong and weak features have organizations associating different business objects in innovation system in a view of better customer needs satisfying and opening for international markets?* The answer gives knowledge base created on the base of TOWARDS project reports and publicity.

*What criteria of innovativeness activity evaluation can be mentioned?*

- Control/ownership
What migration strategies one can mention for particular organizations and what models through benchmark can be applied?

More detailed answers on the questions mentioned above gives knowledge base accumulated in files of TOWARDS project reports and publicity.

Expectations of particular groups of TOWARDS project stakeholders mentioned below at fig. 1, fig. 2 and fig. 3 and fig. 4 express e-learning module goals which should consider both obtained the project outcomes and needs of e-learning end-users. Expectations of particular groups of learners differ to each other but there are some common interests connected to process of migration of SME agri-food associations towards consumer and international markets. Remarks of consumers and a number of their visits at e-learning website can help estimate key determinants of their acceptance for food products what can help farmers, breeders, food processors and distributors adjust their activity in the most appropriate way (see fig.1). Food raw material producer expectations in area of economy, technology, marketing, logistics and common sale and purchase transactions could be satisfied over knowledge available in elaborated press articles and research papers and also through getting in touch over e-learning model and TOWARDS websites where the producers will be able to exchange the best practices and other business information (see fig.2). Expectations of public administration agendas concerning sustainable development of rural areas and solving social and economical problems occurred there will be satisfy over creating common programs and projects with agri-food networks and this way representatives of administration will support local businessmen and their organizations contributing to growth in their competitiveness (see fig.3).

Expectations of research and educational organizations are closed to creating new research area over e-learning module platform giving possibilities of empirical data gathering which can investigate new methods and tools from the scope of associationism, benchmarking, agri-food best practices, changes in rural areas business and social structures, coopetition and other new management conceptual trends. Opposite, businessmen, leaders of agri-food SME networks cal also use achievements of R&D sector over e-learning module content to adjust better to new challenges (see fig.4).
Consumers expectations

What is for you as food consumer a guaranty of healthy food?

- Ecological shop
- Label
- Product mark
- Local deliverer

Food raw material producers expectations

What information is expected from you as food producer?

- Technological knowledge
- Economical knowledge
- Marketing knowledge
- Local deliverer
- Common purchase of means production
- Common sale of products

Fig. 1. E-learning model consumer expectations and their determinants
Source: Own investigation on the base of TOWARD project outcomes

Fig. 2. E-learning model food raw material producers’ expectations and their determinants
Source: Own investigation on the base of TOWARD project outcomes
Expectations of public administration agendas

What area of information are you looking for?

- Social policy
- Economical policy
- Sustainable development of rural areas
- Limiting depopulation of rural areas
- Keeping work places in rural areas

Fig. 3. E-learning model public administration agendas expectations and their determinants
Source: Own investigation on the base of TOWARD project outcomes

Expectations of research and educational organizations

What area of information are you looking for?

- Processes of associationism
- Benchmarking
- Agri-food best practices
- Migration toolkit verification
- Trends in management concepts

Fig. 4. E-learning model research and educational organizations expectations and their determinants
Source: Own investigation on the base of TOWARD project outcomes
For an effective regional sustainability strategy building it is necessary to set up such IT and substantial platform guaranteeing further co-operation of the agri-food sector stakeholders after the TOWARDS project ending.

It seemed that for regional sustainability strategy effective introduction it is necessary to use mentioned above Learner-led e-learning variant (also called self-directed or self-paced learning). The facility of this type of e-learning module is a fact that course content is usually widely accessed by typical web browser like Explorer or Netscape and it is housed on Web server that enables user easy access via Internet to e-learning information and data resources and in other side let monitor learner activity. All instructions for learners must be provide with main course materials together because there is no real instructor or facilitator who might help students in their endeavors. Technology requirements are not so strong, so average level of IT infrastructure is enough to access e-learning content, e.g. multimedia and course authoring tools, fast internet connection, server, learning management suite, content management tool.

Regional network will continue using elaborated tool kit online networking tool and information. Regional body has embedded into its plans the idea of transforming traditional into innovative networks. The regional body will be University of Technology and Life Sciences, Management Faculty, Bydgoszcz, Poland. Web address of body is http://wz.utp.edu.pl/. There are strategic plans of six Polish SME agri-food networks saying they will continue the work of migrating traditional and innovative networks into more innovative ones is confirmed by one of its chief officers. The regional body will use TOWARDS toolkit in syllabuses of M. Sc. Management study program during realization of such subjects as:

- Agri-food SME development in a view of integration processes
- Quality Systems in Food Economy
- Food delivery chains
- Evaluation of SME projects
- Partnership in management

Absolvent will be well prepared for managing with agri-food business units, agri-food branch associations, local governments and self-government agendas in the scope of problems of food delivery chain management especially role of farmers and breeders in satisfying food consumer aspirations. He will transfer knowledge concerning coopetition of business partners in the frame of branch organizations and their co-operation with public institutions. The regional body will use TOWARDS toolkit in training courses for regional animator certificate – new profession officially registered by Ministry of Science and Higher Education. Regional website sustainability will be strengthened also over TOWARDS tools or cases or materials available on the UTP Website. E-learning module platform is built up using the UTP IT resources agreed with the UTP authorities. The IT infrastructure will include such resources like:

- MySQL version 4.3.
- PHP version 4.0
- Server Apache 2.0
- Required disc memory size – 1 GB
4. Conclusion

In the paper e-learning model platform which strengths manufacturing and distributing processes in agri-food SME in the region was characterized. One can observe that both technological aspects and teaching goals should take attention to ensure effective e-learning module platform creation and introduction. Especially learner educational needs and their technical and organizational limits should be considered in a process of e-learning shaping. In other side possibilities of teaching/training institutions should be also defined clearly to be successful in teaching process. Presented case study shows assumptions for e-learning module creation being platform for TOWARDS project regional sustainability strategy strengthening. One can see complexity of the task in the area of differentiated content for different groups of learners. The outcomes over participation and bringing their own input information to the module are possible for all e-learning users.

Bibliography