Project Deliverable Report

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Critical Use Cases and potential Business Model outlines

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Abstract (for dissemination):
This report describes the TENCompetence critical use cases and their potential business models. Therefore seven use cases from the TENCompetence Integrated System were identified. We related the seven use cases to the benefits for organisations, provided in the three most critical use cases. To determine the potential of the business models, we plotted business models against the critical use cases to indicate the viability of each business model in TENCompetence. The top three business models are illustrated by giving outlines of practical cases.
Keywords List:
Business models, Business Benefits, TENCompetence Integrated System, use cases
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1 Introduction

1.1 About this document

This internal deliverable is the report of task 10.6: Define critical use cases and potential business models. These will prepare the future TENCompetence organisational support structure, and may serve as input to WP9 for defining Associate Partner training needs. The focus of this internal deliverable is on critical use cases & three potential business model outlines.

In order to describe the TENCompetence business models and use cases we will begin by defining the term “business model”. In recent years new products have been brought to the market in new ways. TENCompetence is delivering an integrated system for lifelong competence development, known as the Personal Competence Manager (PCM). The PCM can be considered a new “product” or service type in the area of the individual learner’s competence development. TENCompetence will deliver several electronic products and services to the European market for use by European citizens who wish to manage their competences.

With the emergence of new electronically delivered products, various authors have attempted to systematically describe new business models to account for this new mode of commerce (Osterwalder, Pigneur & Tucci, 2005). In today’s literature we find a multitude of ‘business models’ however as yet there exists no consensus on a typology. For this deliverable we have considered a number of renowned theories and classifications including those of Tapscott (2000), Timmers (2000), Afuah & Tucci (2001) and Eisenmann (2002). In the final analysis Rappa’s classification system was adopted due to its incorporation of the theoretical work of Timmers as well as for its pragmatic and comprehensive definition of Business Models which integrates the core elements of the of other authors.

Therefore we define a Business Model, in the most basic sense, as the method of doing business by which a company can sustain itself - that is, generate revenue. The Business Model spells-out how a company makes money by specifying where it is positioned in the value chain (Rappa, 2006).

Besides the business models, our task was also to define critical use cases. To define these use cases, we looked at the TENCompetence Integrated System (PCM). Based upon the functionalities of the PCM, we captured seven essential use cases:
1. Assess competence
2. Conduct learning activities
3. Plan route
4. Provide Support
5. Develop learning materials
6. Build competence development programme
7. Manage PCM
To identify the most critical use cases, we developed a model in which business benefits and the added value of the business benefits are established for each use case of the TENCompetence integrated system.

Finally, potential business models are identified that could be used when offering TENCompetence use cases to organisations. Every organisation has one or more business models to sell products or services with a view to generating revenue. For TENCompetence, Business Models used in the e-commerce domain are explored to identify potential Business Models for TENCompetence.

1.2 Reading guide

In chapter 2 we elaborate on the method used to derive the critical use cases and the potential business models. A description of the seven TENCompetence use cases, currently available with the TENCompetence integrated system is presented in chapter 3. Chapter 4 provides an introduction on business benefits and describes the business benefit areas used to identify and classify benefits. Chapter 5 identifies the critical use cases by rating all the seven TENCompetence use cases. Chapter 6 brings the potential business models and the critical use cases of TENCompetence together. The outcomes of combining the critical use cases and potential business models are described in Chapter 7. Finally we finish with conclusions on the method needed to identify the critical use cases and potential business models for TENCompetence.
2 Method

2.1 Introduction

This chapter describes the method used to derive the critical use cases and potential business models for TENCompetence. Figure 1 presents the overview of the chosen approach. This method consists of several steps which will be elaborated in the following paragraphs.

![Figure 1 – Approach](image)

2.2 Round tables

Our initial idea to determine critical use cases and potential business models was to organise round table sessions for large companies, SME’s and educational institutes to gather information on business models. During these sessions participants discussed the necessity of the TENCompetence use cases. After the discussion participants were asked to estimate the cost price for implementing such use cases within their organisation. The idea was that an average...
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cost price could be determined by taking the average cost price from the indication the participants gave.

During the round table session the difficulties associated with making reliable estimates of the cost price for implementing a TENCompetence use case at this stage of development became apparent. The respondents felt that the context of use and a more detailed description of use cases and TENCompetence functionalities were needed to come to meaningful estimates. Furthermore, participants found it difficult to oversee and estimate all the involved cost parameters (e.g. implementation costs, exploitation costs, maintenance costs) of implementing TENCompetence in their organisation. Most participants did not have the right expertise or were not best placed in their organisation to provide estimates on the cost price.

In addition to this, the interest in the round table session fell short of our expectations. There where only enough participants (7 or more) to proceed with two of the five planned round table sessions. Whilst would-be participants expressed an interest in the business aspects of the TENCompetence project, few were able to make themselves available to participate.

Nevertheless, the round table sessions were successful from a dissemination perspective. The participants were enthusiastic about the round table initiative, the subject focus and the outcomes of the discussions. For the project, the round tables provided useful feedback on opportunities participants have identified for lifelong competence development in their organisations as supported by TENCompetence.

2.3 Critical use cases and business benefits

With the experience of the round tables and the difficulties associated with the quantification of costs per use case, a decision was made to focus more specifically on the added value of TENCompetence use cases for companies and organisations rather than focussing on the purely financial aspect. To this end, the concept of business benefits was employed.

To determine the business benefits of TENCompetence use cases authors from the three organisations drafting this document were asked to ‘score’ the business benefits per use case (see also chapter 4). The respondents were asked to score the added value per identified business benefit for an organisation as high, medium, or low. The rationale behind this idea was to reveal the most important business benefits these organisations share.

The organisations involved were:
- LogicaCMG, an international force in IT and Business services
- OUNL, Open Universiteit Nederland, a university focused on distance learning for students at an academic level
- SURF, a collaborative organisation for higher education institutions and research institutes. It provides the foundation for the excellence of higher education and research in the Netherlands (see also Appendix 1 Organisation descriptions)
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The respondents were free to articulate the number of business benefits they saw and the added value to each business benefit. Using this free format the intention was to get a good indication of how critical a use case is for an organisation. The business benefits for the three organisations and the added values attached to each business benefit provided input to identify an indication of the most critical use cases for TENCompetence as perceived by these organisations.

2.4 Business models

Potential Business Models are identified according to the three most critical TENCompetence use cases. To identify potential Business Models for the most critical TENCompetence Use Cases the typology of Rappa 2006, available at http://www.digitalenterprise.org/models/models.html is used. Members of each organisation were asked to rank the potential of each business Model for TENCompetence Use Cases. This was done in order to establish indications of the perceived potential of respective business models over others with respect to the various business cases. It should be noted that these exercises were undertaken to achieve early elicitation of business benefits and first indications of one or more appropriate business models. Thus, based on the results of this scan, it was possible to determine ways of addressing a wider audience.
3 TENCompetence use cases

3.1 Definition of the TENCompetence use cases

The TENCompetence domain model (Koper, 2005) defines six primary learner goals for the integrated system. These learner goals however are limited in detail and as such would fail to elicit much in the way of business benefits. Moreover, the learner goals do not describe the roles of other actors and secondly they do not specify the activities required to achieve the goals.

The goals from the domain model:
1. I want to keep up to date within my existing function or job.
2. I want to study for a new function or job or improve my current job level.
3. I want to reflect on my current competences to look which functions and jobs are within my reach or to help me define new learning goals.
4. I want to improve my proficiency level of a specific competence.
5. I want some support on a non-trivial learning problem.
6. I want to explore the possibilities in a new field (learning network) to help define new learning goals.

Based upon the domain model, we divide the integrated system, using the learner goals as a starting point, into seven use cases. Figure 2 shows these seven use cases.
Critical Use Cases and potential Business Model outlines

**Figure 2: the seven use cases**

Each learner goal can be achieved by combining one or more use cases, as shown in the following table.

The next three use cases are not directly used by a person in his role as a Learner. Yet they are important because the Learner uses the results of those use cases to:

- Develop learning materials: when conducting learning activities, the Learners use learning materials developed by others in their role as content authors.
- Build competence development programme: Competence managers build the programmes used by the Learners. Learners can choose to do a certain programme or can check how well their competences match with existing programmes, etc.
- Manage PCM: a Service provider/Operator manages the PCM in the background by running servers and installing new TENCompetence software releases.

The table below gives an overview of each individual learning goal combined with one or more use cases with an extended explanation.

<table>
<thead>
<tr>
<th>No.</th>
<th>Goal</th>
<th>Achieved by combining</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I want to keep up to date within my existing function or job</td>
<td>Assess competences, to assess the Learner’s current competences. Based on the results, the Learner Plans a route. Conducting learning activities then takes the Learner along the route. When questions or problems arise, support is provided by Tutors.</td>
</tr>
<tr>
<td>2</td>
<td>I want to study for a new function or job or improve my current job level</td>
<td>see goal 1.</td>
</tr>
<tr>
<td>3</td>
<td>I want to reflect on my current competences to determine which functions and jobs are within my reach or to help me define new learning goals</td>
<td>Assess competences, to assess the Learner’s current competences. Matching the results with built competence development programmes shows how close the match of the Learner’s competence profile/status is with certain functions and jobs.</td>
</tr>
<tr>
<td>4</td>
<td>I want to improve my proficiency level of a specific competence</td>
<td>see goal 1.</td>
</tr>
<tr>
<td>5</td>
<td>Want some support on a non-trivial learning problem</td>
<td>Tutors can provide support to a Learner, to guide the learner to optimize results or solve a learning problem.</td>
</tr>
<tr>
<td>6</td>
<td>Want to explore the possibilities in a new field (learning network) to help define new learning goals</td>
<td>Learners can browse across developed learning materials, built competence development programmes and planned routes of other Learners to explore the potential of the learning network in relation to their learning aims.</td>
</tr>
</tbody>
</table>
3.2 Description of the seven use cases

Conduct Learning activities

Conducting learning activities means the actual undertaking of courses, lessons, e-Learning, traineeships (by a learner) or any other activity to achieve a certain learning objective (competence, skills, knowledge, and attitudes). Usually a learner conducts several learning activities to obtain a learning objective.

Plan Route

Plan route presents the learner with the best possible sequence of learning activities in order to obtain a certain learning objective. The learner receives a roadmap by which he or she can navigate efficiently through the various learning activities. A study advisor can help the learner define the sequence of learning activities.

Provide Support

The provision of support helps the learners to conduct the learning activities. This support can take many forms, such as coach, tutor, helpdesk, peer assistant, FAQ’s, support agents etc.

Assess Competence

Assess competence is the process whereby the learners’ level of a competence is measured by an assessor, by assessing:

- the results of learning activities
- the gap between the previously obtained and recognized competences and the desired competences
- the competences to obtain, which are part of a competence development programme

Methods for assessment of competences can vary from several forms of performance assessment such as, peer assessment, self-assessment, portfolio assessment, 360 degree assessment etc., combined with the more traditional forms of assessments such as multiple choice questions, fill in the blanks, and multiple response questions. All preparations, evaluation and reporting of results are part of the assessing competence use case.

Build Competence Development Program

Build Competence Development programme presents the learner with the set of learning activities which he or she has to perform to attain the competences for a certain function/job/diploma. The competence development programme presents the learner with the whole list of learning activities to conduct in order to become e.g. a
project manager, a master in psychology etc. A competence manager helps the learner to define the competences.

Develop Learning materials

Learning materials are all the materials needed by a learner to learn. These materials include books, articles, HTML pages and computer programmes among others. The development of learning materials is supported as is the need to find appropriate learning materials in knowledge management (learning objects) repositories. The learning materials are usually developed by content authors.

Manage PCM

The Personal Competence Manager (PCM) is the software package of the integrated TENCompetence system. All development work within TENCompetence adds to this, making it TENCompetence’s primary software package. ‘Manage PCM’ entails the management (installing, running and monitoring servers) and maintenance (installing software patches and updates) of the PCM software in order to provide a durable facility to end users. This work is usually done by an operator.
4 Business Benefits

4.1 Introduction

In the previous chapter we identified the seven use cases for the TENCompetence integrated system. To determine which use cases would most benefit an organisation, several business benefits were linked to the use case. The business benefits are described in the next section.

4.2 Business Benefits

In general new product/service developments which are carried out in projects are undertaken to reduce cost and/or improve income. Initially, these objectives are likely to be expressed in soft benefit terms using words such as:

- Improved
- Quicker
- Better
- Enhanced
- Cheaper

Source: LogicaCMG. (2007). Cortex, a company-wide methodology

Reasons for an organisation to implement the TENCompetence infrastructure are the predicted business benefits to be obtained through the TENCompetence use cases. Identification and where possible, quantification of business benefits is needed to determine the added value for an organisation when implementing the TENCompetence use cases.

For the purpose of this document a business benefit is defined as the quantifiable or unquantifiable outcome from the TENCompetence project which is perceived as positive or negative by a stakeholder.

Figure 3 shows the various types of business benefits.
Direct financial business benefits are tangible benefits that can be measured in monetary terms, for example, x% increase in turn-over in a specific business segment. Direct non-financial business benefits are tangible benefits which are difficult or impossible to measure in monetary terms, for example, access to specific business information. Indirect business benefits are intangible benefits that result either from direct benefits or from other changes caused by an implementation.

Implementation of the TENCompetence infrastructure in an organisation may also result in other side-effects and consequences often leading to ‘dis-benefits’. Side-effects and consequences may also lead to additional, possibly unplanned, benefits (Office of Government Commerce, 2003). An example might be the introduction of a new system that transfers decision-making from the central office to individual business units. Greater flexibility and responsiveness to the customer benefit the organisation as a whole, but for individual units, the obligation to take on more tasks is a dis-benefit. Also, at an organisational level, there might be a loss of control and different standards of service as business units begin to diverge.

The table below gives an overview of areas where business benefits may be identified (Office of Government Commerce, 2003):

<table>
<thead>
<tr>
<th>Areas where Business Benefits may identified</th>
<th>Description</th>
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<tbody>
<tr>
<td>Policy or legal requirement</td>
<td>Benefits that enable an organisation to fulfil policy objectives, or to satisfy legal requirements where the organisation has no choice but to comply</td>
</tr>
<tr>
<td>Quality of service</td>
<td>Benefits to customers, such as quicker response to queries or providing information in a way the customer</td>
</tr>
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</table>
**Critical Use Cases and potential Business Model outlines**

<table>
<thead>
<tr>
<th>wants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internal management</strong></td>
</tr>
<tr>
<td>Benefits that are internal to the organisation, such as improving decision-making or management processes</td>
</tr>
<tr>
<td><strong>Process improvement (productivity or efficiency)</strong></td>
</tr>
<tr>
<td>Benefits to allow an organisation to do the same job with fewer resources, allowing reduction in cost, or to do more</td>
</tr>
<tr>
<td><strong>Personnel or HR management</strong></td>
</tr>
<tr>
<td>The benefits of a better motivated workforce may lead to other benefits such as flexibility or increased productivity</td>
</tr>
<tr>
<td><strong>Risk reduction</strong></td>
</tr>
<tr>
<td>Benefits that enable an organisation to be better prepared for the future by, for example, not closing off courses of action, or providing new ones</td>
</tr>
<tr>
<td><strong>Flexibility</strong></td>
</tr>
<tr>
<td>Benefits that allow an organisation to respond to change without incurring additional expenditure</td>
</tr>
<tr>
<td><strong>Economy</strong></td>
</tr>
<tr>
<td>Benefits that reduce costs whilst maintaining quality (often referred to as cost reduction)</td>
</tr>
<tr>
<td><strong>Revenue enhancement of acceleration</strong></td>
</tr>
<tr>
<td>Benefits that bring increased revenue, or the same level of revenue in a shorter timeframe, or both</td>
</tr>
<tr>
<td><strong>Strategic fit</strong></td>
</tr>
<tr>
<td>Benefits that contribute to the desired benefits of other initiatives, or which make them achievable.</td>
</tr>
</tbody>
</table>
5 Identification of Business Benefits

5.1 Identification method

For three organisations (LogicaCMG, Open University, and Surf, see appendix 1 for a brief description of the organisations) benefits are identified per TENCompetence use case. The business benefits areas as described in chapter 4 ‘Business Benefits’ are used to identify the benefits per use case. We refer to high, medium and low.

A service is rated as high when benefits include the addition of (new) value to their own business proposition. When a service is rated as medium the respondents indicate that they perceive the added value of the service as important, while the indicator low refers to slight added value.

<table>
<thead>
<tr>
<th>Added value</th>
<th>Description</th>
<th>Weight values</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>High added value, indicating a service that provides high crucial / very important added value.</td>
<td>3</td>
</tr>
<tr>
<td>Medium</td>
<td>Medium added value: refers to substantial, i.e. important added value.</td>
<td>2</td>
</tr>
<tr>
<td>Low</td>
<td>Added value is perceived as offering some added value of minor importance</td>
<td>1</td>
</tr>
</tbody>
</table>

Appendix 2, 3, and 4 give a complete overview of the identified business benefits per use case and the added value of those business benefits. These overviews were completed independently by LogicaCMG, Open Universiteit Nederland, and SURF by senior employees of those organisations.

The diagram below shows the detailed approach for the identification of potential business models for the three critical use cases of the TENCompetence infrastructure.
The following tables summarises the number of business benefits (for each value of the added value category), the total number of business benefits (column ‘Total’) identified and the score based on the previous table for LogicaCMG, Open Universiteit Nederland, and SURF respectively.

For the identification of potential business models, a case description was produced based on the critical use cases of TENCompetence. Employees of LogicaCMG, Open Universiteit and SURF were asked to rate the available Business Models (as described in chapter 6) with one of the following rating values.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
<th>Numeric representation</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>Very low potential, poor fit</td>
<td>1</td>
</tr>
<tr>
<td>**</td>
<td>Average potential, good fit</td>
<td>2</td>
</tr>
<tr>
<td>***</td>
<td>High potential, perfect fit</td>
<td>3</td>
</tr>
</tbody>
</table>
## 5.2 Identification results

### LogicaCMG – Score per Use Case

<table>
<thead>
<tr>
<th>Use Cases</th>
<th>Added value</th>
<th>Total</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
</tr>
<tr>
<td>Assess competence</td>
<td>5</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Plan route</td>
<td>0</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Build competence development program</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Provide support</td>
<td>2</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Conduct learning activities</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Develop learning materials</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Manage PCM</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

### Open Universiteit Nederland – Score per Use Case

<table>
<thead>
<tr>
<th>Use Cases</th>
<th>Added value</th>
<th>Total</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
</tr>
<tr>
<td>Assess competence</td>
<td>12</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Plan route</td>
<td>2</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Build competence development program</td>
<td>3</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Provide support</td>
<td>1</td>
<td>6</td>
<td>1</td>
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<tr>
<td>Conduct learning activities</td>
<td>0</td>
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<td>Develop learning materials</td>
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<tr>
<td>Manage PCM</td>
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### SURF – Score per Use Case

<table>
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<tr>
<th>Use Cases</th>
<th>Added value</th>
<th>Total</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
</tr>
<tr>
<td>Assess competence</td>
<td>4</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>
Plan route  & 0 & 2 & 2 & 4 & 6  \\
Build competence development program & 2 & 1 & 2 & 5 & 10  \\
Provide support & 2 & 3 & 1 & 6 & 13  \\
Conduct learning activities & 1 & 0 & 1 & 2 & 4  \\
Develop learning materials & 2 & 2 & 0 & 4 & 10  \\
Manage PCM & 0 & 0 & 0 & 0 & 0  \\

5.3 Critical use cases

The table below shows a consolidated view of the score tables from the previous paragraph.

<table>
<thead>
<tr>
<th>Use Cases</th>
<th>Added value High</th>
<th>Added value Medium</th>
<th>Added value Low</th>
<th>Total</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess competences</td>
<td>21</td>
<td>15</td>
<td>2</td>
<td>38</td>
<td>95</td>
</tr>
<tr>
<td>Plan route</td>
<td>2</td>
<td>13</td>
<td>10</td>
<td>25</td>
<td>42</td>
</tr>
<tr>
<td>Build competence development program</td>
<td>5</td>
<td>10</td>
<td>6</td>
<td>21</td>
<td>41</td>
</tr>
<tr>
<td>Provide support</td>
<td>5</td>
<td>14</td>
<td>5</td>
<td>24</td>
<td>54</td>
</tr>
<tr>
<td>Conduct learning activities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Develop learning materials</td>
<td>11</td>
<td>2</td>
<td>5</td>
<td>18</td>
<td>42</td>
</tr>
<tr>
<td>Manage PCM</td>
<td>0</td>
<td>7</td>
<td>0</td>
<td>7</td>
<td>14</td>
</tr>
</tbody>
</table>

The use cases with the highest score (i.e. the highest added value for an organisation) are identified as the most critical use cases of TENCompetence, that is:

1. Assess competence (score = 95)
2. Provide support (score = 54)
3. Shared position for Plan route and Develop learning materials (for both score = 42)

The table below shows the score per Business Benefit area for the identified critical use cases of TENCompetence. The last column shows the total score for a business area.

<table>
<thead>
<tr>
<th></th>
<th>Assessing competences</th>
<th>Provide support</th>
<th>Plan a route</th>
<th>Develop learning materials</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy or legal requirement</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Quality of service</td>
<td>6</td>
<td>15</td>
<td>5</td>
<td>3</td>
<td>29</td>
</tr>
<tr>
<td>Internal management</td>
<td>31</td>
<td>11</td>
<td>9</td>
<td>10</td>
<td>61</td>
</tr>
<tr>
<td>---------------------</td>
<td>----</td>
<td>----</td>
<td>---</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Process improvement (productivity or efficiency)</td>
<td>15</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>38</td>
</tr>
<tr>
<td>Personnel or HR management</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>6</td>
<td>19</td>
</tr>
<tr>
<td>Risk reduction</td>
<td>10</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>Flexibility</td>
<td>9</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>Economy</td>
<td>8</td>
<td>7</td>
<td>5</td>
<td>7</td>
<td>27</td>
</tr>
<tr>
<td>Revenue enhancement of acceleration</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Strategic fit</td>
<td>8</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>95</td>
<td>54</td>
<td>42</td>
<td>42</td>
<td>233</td>
</tr>
</tbody>
</table>

The table shows that the business benefits are mainly realized in the areas of ‘Internal Management’ (score =61), ‘Process improvement’ (score=38) and ‘Quality of Service’ (score=29).

It is possible to connect these benefit areas to direct financial objectives of an organisation (e.g. process improvement results in lower operational costs), but it is very difficult to express these benefit areas in general financial terms. The translation from business benefits (or more general - business benefit areas) into financial terms, strongly depends on the specific characteristics of an organisation such as its size, the business sector of an organisation and the way in which competence development processes are implemented in an organisation.
5.4 Evaluation of the used method

In this chapter the business benefit area framework is used to identify the business benefits for the TENCompetence use cases. Based on the executed benefit identification exercise we have experienced the following advantages using the framework:

- The business benefit areas cover the complete range of possible business benefits. The model is not only focusing on financial business benefits, but also covering tangible and intangible non-financial benefits
- The framework is experienced as an excellent instrument to stimulate the identification of business benefits
- In the context of TENCompetence, the method for identifying business benefits could be used:
  - To establish the practical use of new and existing use case functionality for organisations using TENCompetence
  - To establish the functional areas where the TENCompetence project should focus
  - To emphasize the ‘selling points’ when communicating about TENCompetence (e.g. when answering the question, why should an organisation use TENCompetence?)
  - To classify benefits. For the TENCompetence project it could be valuable to know how business benefits evolve during the live cycle of TENCompetence.
6 Identifying potential Business Models

6.1 Introduction

In the previous chapter the business benefits for TENCompetence were identified. In the next paragraph, we describe the process of reviewing the literature on business models. We explain Rappa’s theory and present the different types of business models he identified.

6.2 Potential Business Models

This deliverable takes into account several renowned theories and classifications like those of Tapscott (2000), Timmers (2000), Afuah & Tucci (2001) and Eisenmann (2002). We finally decided to use the classification of Rappa, since he builds on the theoretical work of Timmers and gives a pragmatic and comprehensive definition of Business Models integrating the main dimensions of other authors.

Therefore we define a Business Model, in the most basic sense, as the method of doing business by which a company can sustain itself - that is, generate revenue. The Business Model spells-out how a company makes money by specifying where it is positioned in the value chain (Rappa, 2006).

Apart from the general definitions of the term business model there a number of attempts to develop classifications and taxonomies of business models. The classifications identified here are all related to the internet and different versions of e-commerce. Timmers listed 11 “e-business” models: e-shop, e-procurement, e-auction, e-mail, third party marketplace, virtual communities, value-chain service provider, value-chain integrator, collaboration platforms and information and trust brokerages (Timmers, 2000).

Other authors have made similar listings. Based on the work of Timmers, Michael Rappa tried to present a comprehensive and cogent taxonomy of business models observable on the web. His proposed taxonomy is not meant to be exhaustive or definitive. Business models will continue to evolve; new and interesting variations can be expected in the future (Rappa, 2006).

The table below gives a brief description of the categories of business models identified by Rappa:

<table>
<thead>
<tr>
<th>Type of Business Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Brokerage model</strong></td>
<td>Brokers are market-makers: they bring buyers and sellers together and facilitate transactions. Brokers play a frequent role in business-to-business (B2B), business-to-consumer (B2C), or consumer-to-consumer (C2C) markets. Usually a broker charges a fee or commission for each transaction it enables. The formula for fees can vary.</td>
</tr>
</tbody>
</table>
### Advertising model
The web advertising model is an extension of the traditional media broadcast model. The broadcaster, in this case, a website, provides content (usually, but not necessarily, for free) and services (like email, IM, blogs) mixed with advertising messages in the form of banner ads. The banner ads may be the major or sole source of revenue for the broadcaster. The broadcaster may be a content creator or a distributor of content created elsewhere. The advertising model works best when the volume of viewer traffic is large or highly specialized.

### Merchant model
Wholesalers and retailers of goods and services. Sales may be made based on list prices or through auction.

### Infomediary model
Data about consumers and their consumption habits are valuable, especially when that information is carefully analyzed and used to target marketing campaigns. Independently collected data about producers and their products are useful to consumers when considering a purchase. Some firms function as infomediaries (information intermediaries) assisting buyers and/or sellers understand a given market.

### Manufacturer (direct) model
The manufacturer or "direct model", it is predicated on the power of the web to allow a manufacturer (i.e., a company that creates a product or service) to reach buyers directly and thereby compress the distribution channel. The manufacturer model can be based on efficiency, improved customer service, and a better understanding of customer preferences.

### Affiliate model
In contrast to the generalized portal, which seeks to drive a high volume of traffic to one site, the affiliate model provides purchase opportunities wherever people may be surfing. It does this by offering financial incentives (in the form of a percentage of revenue) to affiliated partner sites. The affiliates provide purchase-point click-through to the merchant. It is a pay-for-performance model -- if an affiliate does not generate sales, it represents no cost to the merchant. The affiliate model is inherently well-suited to the web, which explains its popularity. Variations include banner exchange, pay-per-click, and revenue sharing programs.

### Community model
The viability of the community model is based on user loyalty. Users have a high investment in both time and emotion. Revenue can be based on the sale of ancillary products and services or voluntary contributions; or revenue may be tied to contextual advertising and subscriptions for premium...
services. The Internet is inherently suited to community business models and today this is one of the more fertile areas of development, as seen in rise of social networking.

**Subscription model**

Users are charged a periodic - daily, monthly or annual - fee to subscribe to a service. It is not uncommon for sites to combine free content with "premium" (i.e., subscriber- or member-only) content. Subscription fees are incurred irrespective of actual usage rates. Subscription and advertising models are frequently combined.

**Utility model**

The utility or "on-demand" model is based on metering usage, or a "pay as you go" approach. Unlike subscriber services, metered services are based on actual usage rates. Traditionally, metering has been used for essential services (e.g., electricity water, long-distance telephone services). Internet service providers (ISPs) in some parts of the world operate as utilities, charging customers for connection minutes, as opposed to the subscriber model common in Europe.
7 Business Model Outlines

7.1 Rating the business models

We asked several professionals of competence development to rate the business models to match the TENCompetence use cases with the identified business models. We provide a category to assess the most relevant business model of TENCompetence as a whole and columns to assess for the specific dimensions (assess competence, provide support and plan route).

Business Model Outlines of LogicaCMG

<table>
<thead>
<tr>
<th>Business models</th>
<th>(overall)</th>
<th>Assess competence</th>
<th>Plan route</th>
<th>Provide support</th>
<th>Develop learning materials</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brokerage model</td>
<td>*/1</td>
<td>*</td>
<td>*</td>
<td>**</td>
<td>*</td>
<td>5</td>
</tr>
<tr>
<td>Advertising model</td>
<td>*/1</td>
<td>**</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>5</td>
</tr>
<tr>
<td>Infomediary model</td>
<td>*/1</td>
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<td>*</td>
<td>*</td>
<td>*</td>
<td>4</td>
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<tr>
<td>Merchant model</td>
<td>*/1</td>
<td>**</td>
<td>*</td>
<td>**</td>
<td>*</td>
<td>6</td>
</tr>
<tr>
<td>Manufacturer (direct) model</td>
<td>*/1</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>4</td>
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<tr>
<td>Affiliate model</td>
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<td>*</td>
<td>**</td>
<td>*</td>
<td>5</td>
</tr>
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<td>Community model</td>
<td>***/3</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>**</td>
<td>11</td>
</tr>
<tr>
<td>Subscription model</td>
<td>***/3</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>12</td>
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<td>**</td>
<td>**</td>
<td>**</td>
<td>8</td>
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</table>

Business Model Outlines of OUNL, Open Universiteit Nederland

<table>
<thead>
<tr>
<th>Business models</th>
<th>(overall)</th>
<th>Assess competence</th>
<th>Plan route</th>
<th>Provide support</th>
<th>Develop learning materials</th>
<th>Total</th>
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### Critical Use Cases and potential Business Model outlines

<table>
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<th>Business Model</th>
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<th>1/1</th>
<th>2/2</th>
<th>1/1</th>
<th>2/1</th>
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</thead>
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<td>*</td>
<td>*</td>
<td>***</td>
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<td>12</td>
</tr>
<tr>
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<td>*</td>
<td>**</td>
<td>*</td>
<td>**</td>
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</tr>
<tr>
<td>Infomediary model</td>
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<td>*</td>
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<td>*</td>
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<td>Manufacturer (direct) model</td>
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<td>Subscription model</td>
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<td>*</td>
<td>***</td>
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</tr>
<tr>
<td>Utility model</td>
<td>***</td>
<td>***</td>
<td>*</td>
<td>***</td>
<td>*</td>
<td>10</td>
</tr>
</tbody>
</table>

### Business Model Outlines of SURF

<table>
<thead>
<tr>
<th>Business models</th>
<th>(overall)</th>
<th>Assess competence</th>
<th>Plan route</th>
<th>Provide support</th>
<th>Develop learning materials</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brokerage model</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>***</td>
<td>*</td>
<td>6</td>
</tr>
<tr>
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<td>Infomediary model</td>
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<td>*</td>
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</table>
Critical Use Cases and potential Business Model outlines

<table>
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<tr>
<th></th>
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<td><strong>Subscription model</strong></td>
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<td>3</td>
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<td>3</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td><strong>Utility model</strong></td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>10</td>
</tr>
</tbody>
</table>

7.2 Evaluation of the used method

In this chapter the business models of Rappa were used to identify which model(s) would suit TENCompetence best. One has to bear in mind that there are several definitions and interpretations of a business model. We see that new business models are continuously developing. We choose Rappa’s because they had a focus on e-commerce. Since TENCompetence has developed an integrated system, these models provide a practical viewpoint for TENCompetence.
8 Business models into practice

8.1 Comparing the business models with TENCompetence

Brokerage model
The brokerage model would provide a place where the ‘Learner’ and the ‘Learning Content Providers’ could meet each other. However, whenever a broker charges a fee for making resources available users encounter a financial barrier. Therefore a brokerage model is somewhat unsuitable wherever a financial barrier comes into play.

Advertising model
Technically speaking, there are possibilities to insert advertisements into the software of TENCompetence. However, it is acknowledged that advertisements which can be shown while one is performing an assessment is not ideal. The same holds true for other TENCompetence services such as support and plan a route. When a user is getting help from an expert he does not want to be disturbed with advertisements. These three use cases are use cases which are not often used; advertising works best with use cases which generate a high volume of usage traffic or a highly specialized user group.

Infomediary model
The infomediary model is unsuitable because TENCompetence handles personal data and information carefully. It is unlikely that users will want to show to the world which competences they possess and even less the competences they do not yet possess. Finally making use of personal data for commercial purposes is highly restricted to privacy law and therefore results in an unsuitable model for TENCompetence.

Merchant model
The merchant model is all about wholesalers and retailers of goods and services. TENCompetence does not provide these kinds of services. It does not buy goods or services from suppliers and sells them to its users with an extra turnover rate.

Manufacturer (direct) model
The manufacturer model is also unsuitable for TENCompetence since it does not produce any goods or services itself. It provides a place where producers and users can meet.

Affiliate model
The affiliate model shares some resemblance with the advertising model. In the affiliate model, revenue is generated by pay-per-click; the organisation will pay a click through rate to the provider. Or revenue is made through banner exchange in which an organisation pays to show its banner on the network. However, the affiliate model has too much in common with the advertising model to qualify it as a suitable model.
Critical Use Cases and potential Business Model outlines

Community model
The community model is a very suitable model for TENCompetence since its revenue can be based on the sale of ancillary products or services or voluntary contributions. Revenue may also be tied to contextual advertising and subscriptions for premium services. More specifically, the TENCompetence infrastructure is open source and therefore shows resemblance with the open source business model. The open source business model relates to software that is developed collaboratively by a global community of programmers who share code openly. Instead of licensing code for a fee, open source relies on revenue generated from related services like systems integration, product support, tutorials and user documentation.

Subscription model
Another suitable model is the subscription model. In this model, the users are charged a periodic fee to subscribe to a service. TENCompetence can combine free content with ‘premium’ subscriber content. For example within the ‘free content section’ the user can do a simple and short assessment, where in the ‘paid content section’ the user can undergo an extensive assessment.

Utility model
Unlike subscriber services, this model charges on actual usage. It is suitable for expensive services, and even more so when those are used relatively rare. Having such a service as part of a subscription would make the subscription costly for the user. Not letting users pay directly for it would be costly for providers as this service is labour-intensive for the providers. Accreditation/Certification is valuable to a learner and they will need it infrequently. On the few occasions when they need it, they will be willing to pay a substantial sum to get their certification.

8.2 Three Business Model Outlines

In the following part three practical examples are explained. After the development of the model and the corresponding templates, we tested it on our own organisations. Subsequent to the development of the model and the corresponding templates, three organisations, which suit these kinds of business models best, were selected to analyze the models in practice. Each organisation was matched with a different business model and it was explained how each organisation will use this business model to benefit most from the TENCompetence concept.

Community Model
Monsterboard is an international online careers and recruitment resource for employers and jobseekers. Monsterboard changes the way people look for jobs and the way employers look for people. It offers innovative technology and first-class services, including advanced privacy technology. This gives consumers and businesses more control over the recruiting process.

With a daily offer of about 50,000 job openings (May 2007) Monsterboard provides the jobseeker with sufficient possibilities to find a suitable job. But Monsterboard wants to offer more then just job openings. They would prefer the jobseeker to get and retain the job (Source: http://www.monster.co.uk/). Monsterboard has a career centre in which the jobseeker can find...
numerous tips to help them succeed in their job application. They can also find information conducive to helping them remain in their chosen career.

In order to attend to specific target groups, Monsterboard has a number of communities on its website. People who are interested in IT, Finance or Sales & Marketing can find specific information about their sectors and the ancillary job openings. People who would like to work abroad can find their information in the International Community. Student and starters find their information on the Student & Career Community.

The next step for Monsterboard could be to start TENCompetence software to further support their website. In addition to job openings and specific information, TENCompetence can also offer a total competence package for the users of Monsterboard.

Looking for a suitable business model it comes clear that Monsterboard should be advised to make use of the community model as described above.

TENCompetence is able to offer a range of services to the users of Monsterboard, the first usage of these services can be offered for free. If the user wants to get more detailed information or support on a specific topic, Monsterboard can charge an additional fee for these ‘premium services’. Another revenue source could come from contextual advertising. Wherever the user of Monsterboard is looking for a job or information in a specific market, a contextual advertisement can be shown.

Utility Model
At the Leidse Onderwijsinstellingen (LOI) one can choose out of more then 400 courses, from simple classes, to officially recognized higher courses (Source: http://www.loi.nl/index.htm). Courses are tailored to an individual’s needs.

The LOI strives to use the latest technologies in the area of competence development. They offer a unique knowledge trainer, a digital i-coach or multimedia assignments.

Quality is one of the most important focus points of the LOI; they strive to be the first to flag new educational needs and to implementing new technologies.

If the LOI were to decide to implement the TENCompetence services, they would be best advised to adopt the utility model. The utility model is based on metering usage or a “pay as you go” approach. This system already exists within the LOI and therefore there is no need for internal changes when the LOI implements the TENCompetence services.

Subscription Model
The subscription model is suitable for every educational organisation which offers fulltime curriculums to their students. TENCompetence could provide a clear infrastructure to schools which would like to offer a more complete competence development package to its students. For example, TENCompetence can provide support and assessments for the competence development of the students. Since most schools already use the subscription business model by charging an annual fee to the students, it is likely that they will continue using this model after implementing the concept of TENCompetence.
9 Conclusion

9.1 Writing and research process

This report explores the critical use cases and potential business models needed to provide one of the foundations for the future TENCompetence organisational support structure, and may serve as input for other work packages such as WP9 in defining Associate Partner training needs. As a result of the difficulties inherent in eliciting information during round table talks, we used a method to identify the business benefits for the TENCompetence use cases. To determine the critical use cases for TENCompetence, the added value was established to identify business benefits. Combining these critical use cases with Rappa’s business models gives us an overview of the most interesting business models for TENCompetence. Finally, the three most interesting business models were elaborated with practical examples.

9.2 Critical Use Cases

Within TENCompetence seven use cases are defined. After identifying the business benefits for TENCompetence according to the method of the Office of Government Commerce (2003) our identification resulted in the following critical use cases:

1) Assess competence
2) Provide support
3) Plan route
4) Develop learning materials

When using the benefits model to identify critical use cases we were able to come up with specific advantages that TENCompetence can offer to its target groups:

- The business benefit areas cover the complete range of possible business benefits. The model focuses on both financial business benefits and on tangible and intangible non-financial benefits.
- The framework is experienced as an excellent instrument to stimulate the identification of business benefits.
- In the context of TENCompetence, the method for identifying business benefits could be used to:
  o establish the practical use of new and existing use case functionality for organisations using TENCompetence
  o establish the functional areas on which the TENCompetence project should be focusing
  o emphasize the ‘selling points’ when communicating about TENCompetence (e.g. when answering the question, why should an organisation use TENCompetence?)
  o classify benefits. For the TENCompetence project knowledge of how business benefits evolve during the live cycle of TENCompetence could be of value.
9.3 Potential Business Models

For identification of the business models we used the business models of Rappa to identify which model(s) would best suit TENCompetence we tested Rappa’s models on use cases of the TENCompetence infrastructure, then we decided which one to outline. It was seen that the community, subscription, and utility model are best suited to TENCompetence. We have shown this in three practical cases. In the future this document can be used to test the method with more (international) organisations. At this point it will be possible to define more explicitly the value of the TENCompetence critical use cases.

9.4 Round Tables

The round table sessions can be considered a success in so far as they were instrumental in informing and engaging companies and organisations and could be used for this purpose in the future. However, it is imperative that the organisation and the goals of any future round table are clearly defined and perfectly communicated to the interested target groups.

In view of this, the goal of future round tables could be used to investigate which needs and problems there are within organisations who deal with competence management and how TENCompetence can complement in this.

9.5 Future Work

The work presented in this deliverable, provides an overview of the possible benefits of the TENCompetence integrated system and gives a first glimpse of potential business models outlines. For the next phase of the TENCompetence project, DIP-3, we would like to adhere to the work presented here, taking into account the usage profiles and their connected services. While working on the present document, the development of the usage profiles were in development with the result that our primary focus was on the integrated system.

Under DIP-3 we will explore how and by whom the TENCompetence services are used in several domains of lifelong competence development, such as employability, corporate training etc. Taking the various domains and stakeholders into account, it is anticipated that WP9 will identify the ways in which the TENCompetence infrastructure could support their existing practises and businesses. This work will be done in close cooperation with other work packages and will focus on developments of the different usage profiles.

Eventually, this will result in defining new tasks, roles, actors and workflows required for the future maintenance, expansion, and exploitation of the TENCompetence services (technical infrastructure). It will clarify how TENCompetence can use its services in the various competence domains to fulfil the needs of the niche markets. These will result in the delivery of the business model document in the form of internal deliverable ID 10.11.
10 References


LogicaCMG. (2007). Cortex, a company-wide methodology


11 Appendix 1 Organisation descriptions

11.1 LogicaCMG

LogicaCMG is a major international force in IT and business services. It employs around 40,000 people across 41 countries. LogicaCMG’s focus is on enabling its customers to build and maintain leadership positions using LogicaCMG’s deep industry knowledge and its track record for successful delivery. The company provides business consulting, systems integration and IT and business process outsourcing across diverse markets including telecoms and media, financial services, energy and utilities, industry, distribution and transport and the public sector. Headquartered in Europe, LogicaCMG is listed on both the London Stock Exchange and Euronext (Amsterdam) and traded on the Xternal List of the Nordic Exchange in Stockholm.

One of the most important aspects of the organisation LogicaCMG is its own personnel. It is very complex to manage your own personnel and therefore LogicaCMG makes use of a standardized set of rules. These rules are standardized worldwide and all subsidiaries and departments use these guidelines.

Below a short overview of the main subjects and guidelines LogicaCMG uses to manage their staff.

Manage Staff
Manage staff defines the management processes, policies and techniques used to successfully recruit, assign, train, develop and keep good staff. The business rules and processes apply worldwide.

Plan Resources
Ensuring that the business secures an optimal level of resources, with the correct balance of capability and skills is essential for business success. This requires that businesses regularly evaluate their resource requirements against previous performance, current and future business needs and customer requirements. Businesses will also need to review current resources against these requirements. Where this review reveals any gap between the current level and/or mix of resources and current or future needs, the business should identify appropriate methods for achieving the optimum level and mix of resources.

This process will then inform and enable decisions on:

- recruitment
- training and development
- management development.

It is the responsibility of all CEOs to ensure that:

- standardized processes are followed
- resources, with the agreed responsibilities and skills, are allocated in support of the processes
- responsibilities are allocated in line with the local structure.
Manage Recruitment
The organisation’s success is dependent on its ability to attract potential recruits of the required calibre and to recruit them efficiently in line with the needs of the business.
The recruitment process is based on the following principles:
- recruitment activities should all be aligned with corporate branding policies
- candidates will be sourced and identified in line with the resource plan
- candidates will be identified and selected based on their skills and abilities regardless of gender, age, race, sexual orientation, disability or other minority groups/attributes in full conformity with local legislative requirements
- candidates will be communicated with in a timely and professional manner so as to reflect our corporate image

The recruitment process will also be designed to enhance the Company’s image and reputation in the external market so as to create competitive advantage.
All recruitment and all resultant offers of employment must be properly authorized in accordance with the defined levels of authority matrix.

Manage Induction and Integration
Providing employees joining LogicaCMG with information on the company, its ways of working and their own role and objectives is essential to helping them to become productive and fully engaged with the organisation.
All employees must therefore receive a formal and structured induction to the company to include information on the business strategy, vision and objectives, the organisational structure, the day to day operation of the business as described in Cortex as well as their own role and objectives.
This requirement applies to all new employees including senior employees or those joining the company as a result of mergers or acquisitions.

The form of the induction process will be adapted to suit local needs, and the particular needs and circumstances of the joiners. The local induction process is to be planned and reviewed to ensure it meets these needs and all relevant materials and resources are up-to-date.
Each business is to produce and maintain a staff handbook that provides additional and local information that contains local policies and relevant employee information.

Manage Employees
A very broad and important part of manage staff is managing employees. Eight sub-categories are distinguished which each of them has its own guidelines, the categories are:
- Manage staff career
- Manage staff performance
- Conduct salary review
- Manage bonus and incentives
- Manage training
- Manage staff engagement
- Manage billable/chargeable assignments
- Manage individual employee records
Manage Leavers
A timely and efficient process for managing situations where the employee leaves the company ensures:

- the impact on the business is assessed and managed effectively
- the assets, security and interests of the business are protected
- the employee is dealt with in a timely and professional manner
- the reasons why staff leave the company are understood so as to provide feedback into other manage staff processes.

The aim of manage leavers is to ensure that all the necessary documentation and processes are undertaken that ensure employees leaving the company are completed in a timely and efficient manner, whether leaving be by resignation, retirement or termination. This policy will also assist the organisation in understanding why employees have chosen to leave.
11.2 OUNL, Open Universiteit Nederland

Open Universiteit Nederland, which welcomed its first students in September 1984, is an independent government-funded institute for distance learning at university level. The Dutch government's purpose in founding Open Universiteit Nederland was to make higher education accessible to anyone with the necessary aptitudes and interests, regardless of formal qualifications.

Mission

Open Universiteit Nederland develops, provides and promotes innovative higher distance education of top quality, in collaboration with networks and alliances. As the prime university for lifelong learning, it addresses the wide-ranging learning needs of people during their course of life, plus the need to achieve a considerable increase of the knowledge level of the community at large.

Open Universiteit Nederland seeks to be an institution that is strongly anchored in the Dutch higher education system through its educational, research and innovation activities, and that also operates successfully in the field of lifelong learning. It is a pioneer in open higher distance education and a leader in educational innovation, both in the Netherlands and internationally. In the market of lifelong learning, Open Universiteit Nederland wishes to establish firm footing.

With a scope of activities that links up well with the needs of the community, Open Universiteit Nederland can count on broad interest, as reflected in the significant enrolment number for its educational offerings. It also offers a professional and result-oriented work climate that activates the competencies of its staff toward joint realization of objectives.
11.3 SURF

SURF is the collaborative organisation for higher education institutions and research institutes aimed at breakthrough innovations in ICT. SURF provides the foundation for the excellence of higher education and research in the Netherlands.

Stichting SURF was founded in 1987 by the joint universities. At present SURF represents over sixty institutions (academic universities, universities of applied sciences, research centers and centers for documentary information services). SURF is also active in many international collaborative platforms such as JISC, TERENA and GLIF. SURF’s Strategic Plan is the guide for its activities. The Strategic Plan covers several years and is formulated by the participating institutions.

SURF consists of three organisations that each have their own field of activity: SURFfoundation, SURFnet and SURFdiensten.

SURFfoundation is the initiator for innovation in higher education and research. SURFfoundation initiates, guides and stimulates ICT innovation through sharing knowledge and partnerships.

SURFnet develops and operates the national SURFnet6 network. It provides innovative services in the areas of security, authentication and authorisation, group communication and video.

SURFdiensten is the organisation for licenses for higher education and research that facilitates the use of ICT. SURFdiensten offers software, content, ICT services and hardware at unique prices and conditions.

SURF’s impact is wider than just higher education and research. One example is DigiID, the digital authentication system used for government services on the Internet. DigiID is based on SURF’s reliable authentication system, A-Select. The creation of finely-meshed optic networks in a number of cities in the Netherlands is also the result of SURF’s pioneering work. SURF is also a founding member of the Amsterdam Internet Exchange, the most important gateway for international traffic into Europe.
12 Appendix 2 – Business Benefits per Use Case for LogicaCMG

Assessing competences

• Policy or legal requirement
  o -

• Quality of service
  o Actual information about available competences could be used for matching job and competences consultant. Increases satisfaction customer (and consultant). [Added value=high]

• Internal management
  o Insight about available competences within organisation including level (e.g. # project managers level 3, or # project managers fixed-price – fixed date project experience). [Added value=medium]
  o Instrument to rank employees within a competence team. [Added value=medium]
  o Input for strategic competence development planning. [Added value=medium]
  o Input for recruitment activities. [Added value=medium]

• Process improvement
  o Improving assessment method to a more mature level. [Added value=high]
  o More uniform classification of competences on international level. [Added value=high]
  o Better fit training needs consultant with offered training. [Added value=low]

• Personnel or HR management
  o -

• Risk reduction
  o Competence information could be used for validating the ability to deliver a project or a consultancy service. [Added value=high]
  o More detailed insight in future competence need. [Added value=medium]

• Flexibility
  o Uniformity in competence definition makes it easier to compare profiles on an international level. [Added value=medium]
  o Tooling makes it easier to carry out assessments. [Added value=medium]

• Economy
  o Better fit consultant opportunity increases satisfaction customer and employee. [Added value=high]
  o Uniformity results in large scale benefits (economy of scales). [Added value=low]

• Revenue enhancement or acceleration
  o -

• Strategic fit
  o Uniform assessment methods make it easier to compare competences on international level. [Added value=medium]
Plan a route

- Policy or legal requirement
  - -
- Quality of service
  - Route plan could be used to align ambitions consultant and possibilities within an assignment (especially in long-term assignments). [Added value=medium]
- Internal management
  - Support production of competence development plan. [Added value=low]
  - Support individual consultants establishing competence development plan. [Added value=low]
  - Uniform presentation of routing information. [Added value=low]
  - Instrument for tracking competence development of consultant or group of consultants. [Added value=low]
- Process improvement
  - Supports competence management with a structured approach for planning a route for consultants. [Added value=low]
  - Optimal fit competence development need and available training. [Added value=medium]
- Personnel or HR management
  - -
- Risk reduction
  - -
- Flexibility
  - Automated support makes it easier perceive various scenarios (e.g. when career path is not clear for a consultant). [Added value=low]
- Economy
  - Efficient and effective training path, results in less training costs. [Added value=low]
- Revenue enhancement or acceleration
  - Optimal route for competence development. Employees will be better skilled. [Added value=low]
- Strategic fit
  - -

Build Competence Development Program

- Policy or legal requirement
  - -
- Quality of service
  - -
- Internal management
  - Uniform way to establish competence development program. [Added value=medium]
  - Structured format for establishing budget for competence development. [Added value=medium]
- Process improvement
Critical Use Cases and potential Business Model outlines

- Uniform format for competence development program. [Added value=low]
  - Personnel or HR management
    - Enables HR to enter all job profiles and to link the employees to those profiles. This information can be used in all kinds of reporting. [Added value=medium]
  - Risk reduction
    - -
  - Flexibility
    - -
  - Economy
    - Automated support saves time establishing competence development plan (decreases costs). [Added value=low]
  - Revenue enhancement or acceleration
    - -
  - Strategic fit
    - Selling point for recruitment activities. [Added value=low]

Provide Support

- Policy or legal requirement
  - -
- Quality of service
  - Competence information of individual consultants faster and more accurate available when handling new business opportunities. [Added value=high]
  - Knowledge Management profile can be used to answer queries from customers. [Added value=high]
- Internal management
  - 24x7 support for consultants to add and update competence profile, competence plan, etc. [Added value=medium]
  - Structuring of competence development information so that structured information is for queries and reporting services. [Added value=medium]
  - Less manual administrative work, results in more attention on the employee. [Added value=medium]
- Process improvement
  - Automated support on the competence development process of an employee. [Added value=low]
  - Access to a broader group of training providers. [Added value=low]
- Personnel or HR management
  - -
- Risk reduction
  - Electronic information is easier to share and to distribute (dis-benefit). [Added value=medium]
- Flexibility
  - Automated support makes it much easier to query on specific competence profile of employees in other countries. [Added value=medium]
- Economy
  - Automated support, less effort for competence manager to assess competence and to establish a competence development route. [Added value=low]
Critical Use Cases and potential Business Model outlines

- Costs for tailor PCM for organisation (dis-benefit). [Added value=medium]
- Costs for maintaining PCM for organisation (dis-benefit). [Added value=medium]
- Revenue enhancement or acceleration
- Strategic fit
  - Align competence profile staff with (international) market needs and market trends. [Added value=medium]

Conducting Learning activities

- Policy or legal requirement
- Quality of service
- Internal management
- Process improvement
- Personnel or HR management
- Risk reduction
- Flexibility
- Economy
- Revenue enhancement or acceleration
- Strategic fit

Develop Learning materials

- Policy or legal requirement
- Quality of service
- Internal management
  - Standardized approach for developing learning materials results in uniform training material, improves maintainability of learning material. [Added value=low]
  - Better access to the developed learning materials. [Added value=low]
- Process improvement
  - Uniformity of learning contents, content could be reused in other countries. [Added value=low]
- Personnel or HR management
- Risk reduction
- Flexibility
  - Exchange of learning content with other parts of the organisation or with other companies. [Added value=low]
- Economy
  - Uniformity in learning materials makes learning material reusable company wide. [Added value=low]
- Revenue enhancement or acceleration
- Strategic fit

Manage PCM
- Policy or legal requirement
- Quality of service
- Internal management
- Process improvement
  - Tools to maintain content in a controlled way. [Added value=medium]
- Personnel or HR management
- Risk reduction
- Flexibility
  - Management tool make it easy to manage functions and data of the PCM. [Added value=medium]
- Economy
- Revenue enhancement or acceleration
- Strategic fit
13 Appendix 3 – Business Benefits per Use Case for OUNL, Open Universiteit Nederland

Assessing competences

• Policy or legal requirement
  o Assessment services aimed at official certification of OUNL bachelor and master BA/MA qualifications. [Added value=high]

• Quality of service
  o Actual information on available competences of a person or team which can be used for matching a job profile and fits to the OUNL study. The result is improved coaching to maximize job and study achievements to the person’s potential. Quality increase of customer services and perceived added value. [Added value=high]

• Internal management
  o TENCompetence services enable explicit overviews on competence developed, learners contributions to the network and knowledge resources available to other learners and organisations. Thus available learning resources generated can be assessed and recognized to the contributor. [Added value=high]
  o Assessment of competences (its nature and respective competence level) of OUNL students and employees will provide valuable insight into the actual situation and learning potential (a SWOT analysis) of both students and workers of the organisation. [Added value=high]
  o Concurrently the status of competences assessed generates insight into the competence gap that needs to be bridged. [Added value=high]
  o Assessment of an employee’s competence is relevant for her POP personal development plan; it offers input for strategic competence development of the organisation/department and provides input for recruitment (job profiles). [Added value=high]
  o Instrumentation of the employee’s SWOT profile needed for composition of (student/work) teams. [Added value=medium]

• Process improvement
  o Integration of assessment methods in use (regular and EVC assessment). [Added value=high]
  o International connectivity, via use of uniform standardized classifications of competences and e-portfolio’s. [Added value=high]
  o Optimal fit of CPD offerings to learning needs of the individual, team and organisation. [Added value=medium]

• Personnel or HR management
  o Competence assessment services offers validated insight into a persons/team/organisations competences (strengths/weaknesses and opportunities) offering a foundation for a HR competences development strategy. A process that becomes more tangible and transparent. [Added value=high]

• Risk reduction
Critical Use Cases and potential Business Model outlines

- Insight into the available competences enables a realistic job/task – people fit thus reducing risks. [Added value=high]

- Flexibility
  - Insight into the available competences and learning potential enables flexible response to new challenges. [Added value=high]

- Economy
  - Overview of available competences and ongoing competence development programmes enables employees to generate added economic value for others. [Added value=medium]
  - Interoperability of TENCompetence infrastructure enables economic acceleration and scaling advantages. [Added value=medium]

- Revenue enhancement or acceleration
  -

- Strategic fit
  - This TENCompetence service enables insight in the strategic fit of employee-organisation. What is the actual match of the standing organisation to (new) strategies? [Added value=high]

Plan a route

- Policy or legal requirement
  -

- Quality of service
  - Route planning services to personalise student ambitions and provide optimal formal and informal learning combinations to the competence objective. Optimizing route services integrated across all levels from macro route planning (long term, high level CPD to meso- and micro route support). [Added value=high]

- Internal management
  - Route planning services enable an optimal efficient and effective route to the envisaged objectives. Skipping breakdowns and time loss due to planning barriers. [Added value=high]

- Process improvement
  - Systematic competence management provides multiple routes for a variety of study paths, jobs. [Added value=medium]
  - Provision of awareness, continuous route information across study and student population. Uniformity and interconnectivity ads to possibilities international study TOM-TOM. [Added value=medium]

- Personnel or HR management
  - Explicit and optimal route planning provides certainty and realistic estimations of study time. The insight into the route leading to the competence motivates. [Added value=medium]
  - Opportunity of tracking of progress of individual and groups. [Added value=medium]

- Risk reduction
  - Risk reduction via early warning signalling possible of deviations from route planned. [Added value=medium]
• Flexibility  
  o Route support enables flexibility when thanks to a uniform infrastructure changes to alternatives can be used. [Added value=medium]

• Economy  
  o Decrease of training costs due to possibilities of optimization and personalisation of learning paths. [Added value=medium]  
  o Optimization of route offers opportunity to maximize competence development results. [Added value=medium]

• Revenue enhancement or acceleration  
  o -

• Strategic fit  
  o Effective and efficient competence development paths, enables to keep focused on the strategic objectives. [Added value=medium]

Build Competence Development Program

• Policy or legal requirement  
  o -

• Quality of service  
  o Strategic importance of services that articulate competence profiles and development programmes in tangible ways. Quality improvement since the criteria becomes clear to all actors (learners, employees and organisation) for competence development. [Added value=medium]

• Internal management  
  o Integration of TENCompetence services enables long term, large development programmes for student and employee population to exploit their talent potential. [Added value=high]  
  o CPD services explicitly define development programmes for student learners and employees articulating ambitions, activities and effort (=time, costs and revenues). [Added value=medium]  
  o CDP services help to optimize the definition of study and job plans (for students) and personal development plans for employees. It optimizes the organisation of tasks and select team members for fit for a task etc. [Added value=high]

• Process improvement  
  o CPD generates uniform methods to design, execute competence development program. [Added value=medium]  
  o Insight and overview of available competence development programmes. [Added value=medium]

• Personnel or HR management  
  o Up to date dynamic competence mapping as underlying foundation for study and job profiles. Enabler of positioning and development support, etc. [Added value=medium]

• Risk reduction  
  o Redundancy and incompatibility of CDP’s. [Added value=medium]

• Flexibility
Integrated and up to date CDP information enables flexible queries and overview to find optimal solutions. [Added value=high]

- Economy
  - Economy of scale, uniformity and interoperability enables re-use company wide. [Added value=low]
- Revenue enhancement or acceleration
  - 
- Strategic fit
  - 

**Provide Support**

- Policy or legal requirement
  - 
- Quality of service
  - In combination with other services coaches can support the individual student or employee more precisely and more rapidly to achieve their learning objectives and performance goals/needs. [Added value=high]
  - Provision of dedicated and 7x7 support across the network. [Added value=medium]
  - Access to tutors possible tutor available in the network. Possibility of improved coaching at the same time supporting the tutor. [Added value=medium]
- Internal management
  - Streamlining internal management (administration/information) processes. [Added value=medium]
- Process improvement
  - Automation of certain support functions (competence profile and development information. [Added value=low]
- Personnel or HR management
  - 
- Risk reduction
  - 
- Flexibility
  - Automated support functions enables cross network queries. [Added value=medium]
- Economy
  - Costs for development and maintenance of services. [Added value=medium]
- Revenue enhancement or acceleration
  - 
- Strategic fit
  - Alignment of support to learning and performance objectives of actors involved. [Added value=medium]

**Conducting Learning activities**

- Policy or legal requirement
  - 
- Quality of service
Critical Use Cases and potential Business Model outlines

- Internal management
- Process improvement
  - Adaptive support helps the learner to profit from the challenges/chances available for personal development in a learning network. Learning activities offered online, enable study at a suitable time, place (mobile/work/school) and pace. [Added value=medium]
- Personnel or HR management
  - Integration of learning with real live, enables learners to stay engaged all the time. To be-(come) an active learner for personal empowerment and development in one’s career and hobbies. [Added value=low]
- Risk reduction
  - Motivated learners stay on track. The risk of drop outs will reduce. [Added value=low]
- Flexibility
  - Economy
    - The learning results of active learners can enable economic revenues generated thanks to the increased competence of these people. New economic opportunities will be seized and generate economic value. [Added value=low]
- Revenue enhancement or acceleration
  - Strategic fit
    - Develop Learning materials
      - Policy or legal requirement
        - Quality of service
          - Added value via the use of standardized LM specifications and learning design methods. [Added value=high]
      - Internal management
        - Integration and interconnectedness of stored learning materials in the TENCompetence infrastructure cares for systematic organisation find ability and accessibility. [Added value=high]
        - Improved maintenance due to standardization. [Added value=high]
      - Process improvement
        - Reuse or adaptation of learning materials across CDP. [Added value=high]
      - Personnel or HR management
        - Possibility to use or develop materials fit for use. [Added value=high]
        - Integration of learning materials. Bringing the learning materials to the learners (desktop/work environment). [Added value=high]
      - Risk reduction
        - Flexibility
Critical Use Cases and potential Business Model outlines

- Ease of use, and flexibility in transfer of learning materials. [Added value=high]
- Economy
  - Sharing learning resources for different purposes, persons, programmes and settings. [Added value=high]
- Revenue enhancement or acceleration
  - Cost reductions per unit of learning material due to shared development, reuse. [Added value=high]
- Strategic fit
  - -

Manage PCM

- Policy or legal requirement
  - An integrated PCM service offers added value by its combination, providing a political and legal infrastructure in the TENCompetence infrastructure. [Added value=medium]
- Quality of service
  - The integrated PCM service offers added value by its combination, and providing a political and legal infrastructure. [Added value=medium]
- Internal management
  - Offering of a working organisational structure. [Added value=medium]
- Process improvement
  - Tooling offered to structure interoperability and guard continuity. [Added value=medium]
- Personnel or HR management
  - -
- Risk reduction
  - -
- Flexibility
  - Enabling infrastructure to support technological and data processing functionalities of the PCM. [Added value=medium]
- Economy
  - -
- Revenue enhancement or acceleration
  - -
- Strategic fit
  - -
14 Appendix 4 – Business Benefits per Use Case for SURF

Assessing competences

• Policy or legal requirement
  o -
• Quality of service
  o -
• Internal management
  o By assessing competences SURFfoundation will gather information about the available competences and their levels of its employees. [Added value=high]
  o Input for competence development programmes for SURFfoundation employees. [Added value=high]
  o Overview of missing competences within the SURF organisation. [Added value=high]
• Process improvement
  o -
• Personnel or HR management
  o By assessing ones competences you know exactly which are your strengths and weaknesses, and the competences which you can develop during a period. This works often very motivating. [Added value=medium]
• Risk reduction
  o By having an overview of your personnel’s competences, it is easier to adapt to new challenges our organisation. [Added value=medium]
• Flexibility
  o It is easier to see, which employees are adequate persons, to respond to new challenges. [Added value=medium]
• Economy
  o -
• Revenue enhancement or acceleration
  o -
• Strategic fit
  o Good to see if the competences of SURFfoundation employees match with our strategy and mission. [Added value=high]

Plan a route

• Policy or legal requirement
  o -
• Quality of service
  o -
• Internal management
  o By planning a route employees follow the most efficient route to develop a competence, so less time is lost with planning and scheduling learning activities. [Added value=medium]
• Process improvement
- Supports competence management with a structured approach for planning a route for consultants. [Added value=low]
- Personnel or HR management
  - By showing the route to effectively obtain a competence, works motivating. [Added value=low]
- Risk reduction
  - -
- Flexibility
  - -
- Economy
  - Efficient training paths, results in less training costs. [Added value=medium]
- Revenue enhancement or acceleration
  - -
- Strategic fit
  - -

**Build Competence Development Program**
- Policy or legal requirement
  - -
- Quality of service
  - -
- Internal management
  - By defining the competence development programmes of SURF employees, it makes it clear, how many development programmes there are, what the costs are, and how much time is involved. [Added value=high]
- Process improvement
  - It is easier to get an overview of all the competence development programmes in less time. [Added value=low]
- Personnel or HR management
  - All the job profiles and their belonging competences can be stored, and it is possible to get an overview of the employees linked to those competences. [Added value=medium]
- Risk reduction
  - -
- Flexibility
  - With the overview of all the competences, is easy to see in one way if the competences/job profiles need to change. [Added value=low]
- Economy
  - -
- Revenue enhancement or acceleration
  - -
- Strategic fit
  - SURF wants to have highly qualified personnel, by presenting the job profiles and their competences; it is clear to future employees what the criteria are to work for SURF. [Added value=high]
Critical Use Cases and potential Business Model outlines

**Provide Support**
- Policy or legal requirement
  - -
- Quality of service
  - We can help our members with answering their questions within our communities faster. [Added value=medium]
- Internal management
  - By offering automated support, our employees can receive support for learning 24X7. [Added value=high]
- Process improvement
  - Coach and tutoring of SURF employees can be done online, which means that the learning can also be done after office hours. [Added value=high]
  - Access to a broader group of tutors. [Added value=medium]
- Personnel or HR management
  - Adequate and automated support were possible motivates the SURF employee to study efficiently. [Added value=medium]
  - Good tutoring means less study time, which leads to more work time. [Added value=low]
- Risk reduction
  - -
- Flexibility
  - -
- Economy
  - -
- Revenue enhancement or acceleration
  - -
- Strategic fit
  - -

**Conducting Learning activities**
- Policy or legal requirement
  - -
- Quality of service
  - -
- Internal management
  - -
- Process improvement
  - When the learning activities are presented in an online manner, the SURF employee can study during their work, so the actual learning takes place on the job, which is good for the transfer of knowledge. [Added value=high]
- Personnel or HR management
  - Conducting learning activities and developing competences, often presents employees new insights and to adjust to new challenges. [Added value=low]
- Risk reduction
  - -
• Flexibility
  o -
• Economy
  o -
• Revenue enhancement or acceleration
  o -
• Strategic fit
  o -

**Develop Learning materials**

- Policy or legal requirement
  o -
- Quality of service
  o -
- Internal management
  o All the learning materials needed for a competence development programme is stored in one location, which is always accessible. [Added value=medium]
- Process improvement
  o The same learning resources can be used in different programmes. [Added value=high]
- Personnel or HR management
  o -
- Risk reduction
  o -
- Flexibility
  o It is easier to exchange learning materials. [Added value=medium]
- Economy
  o The same learning resources can be used in different programmes, so the learning materials can be reused several times, for a lot of persons, which is cheaper. [Added value=high]
- Revenue enhancement or acceleration
  o -
- Strategic fit
  o -

**Manage PCM**

- Policy or legal requirement
  o -
- Quality of service
  o -
- Internal management
  o -
- Process improvement
  o -
- Personnel or HR management
  o -
• Risk reduction
  o -
• Flexibility
  o -
• Economy
  o -
• Revenue enhancement or acceleration
  o
• Strategic fit
  o -