



# WP.T2\_GENERAL FRAMEWORK FOR WISES TECHNOLOGICAL AND KNOWLEDGE MANAGEMENT MODEL

## A.T2.4\_GUIDELINES FOR IMPLEMENTATION OF DIGITAL SOLUTIONS IN A COHERENT ENVIRONMENT

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D.T2.1.2 - List of variables describing  
WISE environment related to best  
practice and valuable guidelines  
FPM

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Version 1  
30.10.2018

draft by:	<i>FPM team, FPM</i>	date:		<i>version n°1</i>
comments by:		date:		<i>version n°2</i>
FINAL VERSION				
approved by:	<i>Raffaele Cerella, FPM (WP.T2 leader)</i>	date:	20.11.18	



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## 1. INTRODUCTION

This deliverable titled “DT2.4.2 List of variables describing WISE environment related to best practice and valuable guidelines” concludes the activities of AT2.4.4 as well as of the OR2.

The objective of this document is to illustrate how the platform can use different types of content to manage and, better, how it is able to adapt to the specific features of companies according to their specific nature. Regarding the specificities, or rather, the context variables that may impact, we will define possible reference profiles to address the use of the tools.

The main configuration elements can be traced back to the two founding modules of the platform: the marketplace and the skills management framework.

In the following chapters we will explain how the defined profiles can be associated with specific platform configurations.

**Chapter 1** shows the methodological approach used for the analysis reported in the document. The chapter reports an analysis of the literature in which it is outlined how the context factors characterize the development of a specific informatics support of a company.

**Chapter 2** starting from what emerged from the literature analysis, illustrates which elements emerged from the literature can also be valid for the WISE and defines the potentially configurable elements of the platform.

**Chapter 3** focuses on the configurable elements of the platform describing in a way the platform meets the different ones.

Finally, **chapter 4** shows a possible mapping between the defined profiles of the companies and the platform configurations.



## 2. CONTEXT ANALYSIS

This chapter contains the approach used to define which are the variables relevant to the WISEs. The list will take into account some aspects such as region, dimension, field of application and some others that will emerge from the literature analysis.

In order to identify the context elements that have a significant impact on the companies' Information Systems, we have performed a literature review.

A brief introduction on the different existing types of Information Systems will allow us to better understand the context elements that impact on them.

As previously seen, an Information System is a combination of resources (human and material) and organized procedures for the collection, archiving, processing and transmission of information necessary for carrying out the activities of the company (operational, management, programming, control and evaluation of the organization). About that, the Anthony's Triangle [1] provides an organizing framework to classify information system types and it offers a hierarchical view of information needs. Because it classifies information system types, then indicates the nature of various types of information system in terms of their targeted users and the kind of information needs that each of these information systems can support. Eventually Anthony's Triangle claims that each hierarchical level is associated to a certain type of informative and applicative support, therefore (also depending on the individual role within the company) a support configuration can be defined.

In detail, for each hierarchical level present in the company, a specific IT system is necessary to supply the most suitable service for the needs expressed by: executives, senior managers, middle managers and workers.

In particular, a typical organization has six Information Systems, each supporting a specific organizational level as emerged from the literature review [2]. These systems include Transaction Processing Systems (TPS) at the operational level, Office Automation Systems (OAS) and Knowledge Work Systems (KWS) at the knowledge level, Management Information Systems (MIS) and Decision Support Systems (DSS) at the management level, and the Executive Support Systems (ESS) at the strategic level. Below we have the specific description of them and their specific usage for the different hierarchical levels:

- **Transaction Processing Systems (TPS):** these are operational-level systems that are usually operated directly by shop-floor workers or front-line staff, which provide the key data required to support the management of operations. This data is usually obtained through the automated or semi-automated tracking of low-level activities and basic transactions.
- **Office Automation Systems (OAS):** they execute office transactions and support official activities at every organizational level. These activities can be divided into clerical and managerial activities. Clerical activities performed with the help of office automation systems include preparing written communication, typesetting, printing, mailing, scheduling meetings, calendar keeping, etc. Under managerial activities, office automation systems help in conferencing, creating reports and messages, and controlling the performance of the organization. Many applications like word processing, electronic filing and e-mail are integrated in office automation systems.



- **Knowledge Work Systems (KWS):** these are specialized systems built to promote the creation of knowledge and to make sure that knowledge and technical skills are properly integrated into business. They help the knowledge workers in creating and propagating new information and knowledge by providing them the graphic, analytical, communications, and document management tools. Some examples of knowledge work systems are computer-aided design (CAD) systems, virtual reality systems, and financial work stations.
- **Management Information Systems (MIS):** management-level systems that are used by middle managers to help ensure the smooth running of the organization in the short to medium term. The highly structured information provided by these systems allows managers to evaluate an organization's performance by comparing current with previous outputs.
- **Decision Support Systems (DSS):** these can be seen as knowledge based systems, used by senior managers, which facilitate the creation of knowledge and allow its integration into the organization. These systems are often used to analyze existing structured information and allow managers to project the potential effects of their decisions into the future. Such systems are usually interactive and are used to solve ill-structured problems.
- **Executive Support Systems (ESS):** these are strategic-level Information Systems. They help executives and senior managers analyze the environment in which the organization operates, to identify long-term trends, and to plan appropriate courses of action. Executive Information Systems are designed to be operated directly by executives without the need for intermediaries and easily tailored to the preferences of the individual using them.

The evaluation process leading to the decision to introduce an Information System into the company is rather complex and requires the assessment of a large number of aspects [3]. The most important step in this evaluation process is to select the relevant key aspects, then evaluate the impact and choose the best solution available.

However, if this evaluation process concerns the world of WISEs, some specific considerations must be made. To do this, we will perform a literature research, in which we will try to analyze the elements that have an influence on Information Systems.

A first dimension provided from the literature is the **company dimension**: this is an important factor that can influence the degree and type of Information Systems adopted. For example, micro-enterprises can only adopt a limited amount of IT tools due to their traditional lack of financial and human resources. In this context, the cost of technology acquisition can be significant. Moreover, these companies have simple organizational processes, which can be monitored directly by the owner-entrepreneur, so they do not require complex systems. Usually these companies use e-mail, Internet and simple Information Systems aimed at improving some operational processes [4]. In the same way, it is likely for SMEs to adopt more IT tools than micro-enterprises, but lower than larger companies. [5] The most evident digitalisation among SMEs concerns basic accounting Information Systems, which contribute to the production of valid descriptive and diagnostic information. However, the tendency is instead for predictive and prescriptive information (typically deriving from managerial and strategic systems) to become more and more useful to monitor and improve the company's future development. [6]



Our analysis provides another element to be highlighted: it is important to analyze the level of ICT development in each country. This analysis can be done by using two indices: the *ICT Development Index* (IDI) [7] and the *Networked Readiness Index* (NRI)[8].

The IDI is an index published by the International Telecommunication Union of the United Nations (ITU) on the basis of representative indicators of the use of internationally agreed IT and ICT. The index, which can be used as an assessment tool at regional and national level, combines 11 indicators grouped into three sub-indices: use, access and skills in terms of ICT.

The second index, the NRI, is published each year by the World Economic Forum, and is used to measure the propensity of countries to benefit from the opportunities offered by ICT. It is calculated in reference to 144 countries in the world and is based on the examination of three large dimensions: a) the economic, regulatory and infrastructural environment for ICT; b) the preparation of the primary stakeholders of every civil society (i.e. private citizens, companies and governments) to use and benefit from ICT; c) the effective use of the latest technological developments available.

Some elements can be highlighted about the countries involved in the Inno-WISEs project: based on the IDI index, for example, we note that Croatia and Slovenia are ranked relatively higher than Italy and Poland, all four of them ranking within the first 50 positions.

Regarding the NRI index, we observe that the "efficiency of legal framework in challenging regulation" aspect is greater in Slovenia and Poland than in Croatia and Italy, while the "importance of ICTs to government vision of the future" aspect is roughly similar in the four states (all of them ranking near the 100th position) with a higher level in Slovenia. In terms of presence and use of infrastructures and digital content, the four countries rank among the top 50, with Slovenia ranked significantly higher than the remaining three countries.

The analysis shows that companies, in the countries where the project is being deployed, will be able to overcome the challenges they face through innovations that leverage ICT technologies. This will be possible through greater aid and support for SMEs, so that they can use more and more the tools that ICT can provide to make them functional for structural innovations and a different way of doing business.

Therefore, company size and country of origin are two important factors as regards the level of learning of companies. However, given the continued decline in IT costs, it is possible that the business dimension is becoming less relevant.[9]

We also observed another interaction in the Porter value chain, that identifies and classifies the main processes of an organization, dividing them between primary processes (aimed at the mission and therefore the production of essential products / services) and support processes (aimed at supporting the primary activities, essentially as processes for managing the resources used). The various processes and their component activities need a different Information System for each enterprise. So another element able to influence the IS is represented by the **enterprise's core business** and services / products offered by it, as our research shows.

In this sense we can highlight how the Information Systems are different according to the **core business** of a company, and how they have to provide them the most suitable service for their business.

Essentially, it is not easy to make all these different types of systems coexist in a society. A solution to this problem is to implement an integrated Information System, whose applications extend over functional areas and business processes throughout the organization, encompassing all levels of management. Business applications help companies become more flexible and productive,



coordinating their business processes more closely and integrating process groups in order to facilitate efficient resource management.

Each WISE will therefore have a more developed application depending on its core business. There will be five main applications, as emerges from the literature review [10]:

- ERP systems (Enterprise Resource Planning) have the objective of integrating business processes, from production to finance and accounting, from sales to marketing and human resource management into a single software system,
- Supply Chain Management systems (SCM) are used to manage relationships with suppliers. These systems help suppliers, distributors and logistics companies to share information on orders, production times, inventory levels and product delivery so that everyone can deliver their goods and services efficiently, i.e. in as little time as possible and at the lowest cost,
- Customer Relationship Management (CRM) systems help manage customer relationships, i.e. provide information to coordinate all business processes involved in sales, marketing and customer service, with the aim of optimizing sales, satisfaction and customer loyalty,
- Corporate Knowledge Management Systems (KMS) enable organizations to better manage processes for the identification, application and dissemination of knowledge and skills within the company. Knowledge is fundamental in a company because it is a difficult resource to imitate, unique, which can be exploited to obtain long-term strategic benefits. KMS systems gather all the knowledge in the company and make it available where and when it is needed to improve business processes and management decisions.
- Collaborating Planning, Forecasting and Replenishment (CPFR) is a set of data-driven business processes designed to improve the ability to predict and coordinate with supply chain partners. With CPFR, suppliers and retailers collaborate in planning and demand forecasting in order to ensure that members of the supply chain will have the right amount of raw materials and finished goods when they need them.

These categories of software can be associated, as seen below in Anthony's pyramid [11], at different levels of work activities in the company. It is possible to divide them into subsets: one part is addressed to the management subsystem (strategic activities + tactical activities) i.e. the KMS, the other to the operating sub-system that uses the following categories of applications for the performance of current activities: ERP, SCRM.

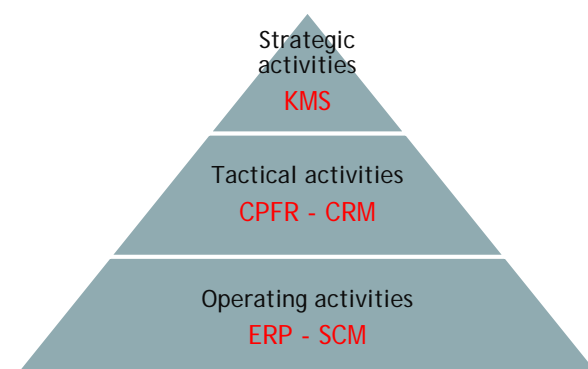


Fig.1: Anthony's pyramid with directional and operational software





Due to their strategic value, management activities will be more similar between the different companies. In fact, as already seen above with Porter, some applications will be used across business areas and in relation to several support processes, while others will be used in relation to primary activities.

Finally, it is therefore reasonable to say that an Information System should provide a support to the operations of businesses, and be tailored according to the competences of its users: the more relevant the competences are, the more advanced the Information System should be. Therefore another important element is that of the **user competences**, which are able to influence the development of the Information System within a company.

In details about the competences, as seen for the development of the competence framework in Deliverable D.T2.3.2 "Knowledge management framework to address competences enhancement through training", the development of a company is linked to the level of competence. In particular, as seen in the e-CF framework [12], there are 5 areas to be managed (plan, build, run, enabled, manage) that reflect the different levels of competence. Then depending on the level of competence, the right level of tools will be available, but the use of advanced and complex systems can not be separated from the skills.

Ultimately we can say that both the geographic membership and the company size are relevant factors that can influence the adoption of Information Systems, as well as the company's core business and the competences existing in the company. Therefore, it is important to try and take into account both the dimensional impact and the effect deriving from the environmental circumstances present in the various national contexts, when dealing with the implementation of an Information System.

As we have seen from the literature review, the Information Systems can assume different characteristics depending on the context variables in which they are inserted, such as:

- the company dimension,
- the country in which they are located,
- the company's core business,
- the user competences level

In the next chapters, we will see first what context variables emerged from the literature are also relevant for WISE and subsequently which components of the INNO-WISEs platform can be considered configurable according to the characteristics of the WISE.





### 3. WISEs RELEVANT VARIABLES

This chapter contains the list of variable describing WISEs environment that are relevant for defining reference profiles for the social footprint with respect to which they can be identified or find similarities.

Let's start from the previous chapter the variables considered significant to describe the context of evolution and specialization of the information systems of companies and starting from those we analyze how they can be combined for the WISE.

The approach used in defining for each identified variable, a possible scale of values within which to define consequently the possible clusters based on the range of variable values. In this way, every WISE can identify itself within a cluster, on each variable and identify the profile to which it is closest.

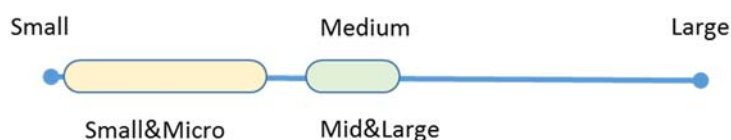
The size of companies<sup>1</sup> is an element of great importance and can be analyzed both in terms of turnover and of people employed.

Going deep into, the value of turnover is generally an indication of a certain volume of activity to be carried out and consequently to be managed. The physical and human resources are obviously linked to the activities to be carried out and managed. Oversimplifying the analysis to a certain volume of activity are associated with an adequate number of human resources that must carry out the activity. We do not enter, at this moment, on the efficiency of the people but we limit ourselves to say that a specific amount of activity can be associated with a certain quantity of resources that grows with the growth of volumes with a certain level of efficiency.

Looking instead at the point of view of the people employed, each person generates a certain number of activities and requires a certain effort for the administrative and accounting management of people as "employees". In the case of WISE, as the work integration of disadvantaged people is the primary mission, there is an even greater attention to their management.

With respect to this variable we can define two macro categories "Small & Micro" and "Mid & Large". To the first belong those very small companies that employ a limited number of resources and whose turnover can be considered low; the latter include those more structured companies that employ a greater number of resources, in some cases even hundreds of people, as in the case of some Lombard companies, and which reach equally significant revenues.

#### Company size



it is important to specify that the average positioning of the WISE, and therefore the size of the indicators, shown in the graphs above and below, is purely indicative and reflects a perceived and unmeasured data of the reported aspects.

It is possible define differential elements that characterize companies also by looking at the country of belonging: first of all with respect to the specific legislature that defines the legal entity of the

<sup>1</sup> dimension definition based on <https://help.companycheck.co.uk/hc/en-us/articles/202550273-What-determines-the-size-and-type-of-company->

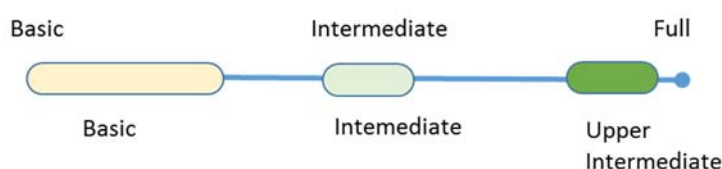


enterprise, policies to support entrepreneurship, as well as policies for technological development and not least the language. Focusing on these last two elements, policies for technological development can be considered as enabling elements and can accelerate development. We decided not to consider this dimension because it does not result in a differential element and it would be difficult to define a scale of how much it impacts on each company. Finally, the language of belonging and the level of knowledge of a shared language such as English. In a trans-national European context, such as the one in which the project fits, it implies that in the five regions to which the WISE belong, four different languages are spoken.

The INNO-WISEs platform aims to provide a tool common to all WISEs and that simultaneously meets the specificities of WISE. This implies, in some cases, the use of tools in English, sometimes not available in the languages of the individual regions. Here the knowledge of English becomes an enabling element but also a constraint to fully exploit its benefits. Trying to define a scale within which to classify companies, we could define:

- a basic level in which the language known and usable for the platform is only the mother tongue,
- an intermediate level, in which the mother tongue is accompanied by a knowledge at a strictly professional level, and technician of the sector,
- a third level with a full knowledge of the English language.

### Spoken Language level



We can therefore define three clusters: the first basic whose level is limited to its mother tongue, an intermediate level and an upper intermediate level in which, however, we can define the level sufficient for a full and complete use of all possible instruments.

Knowledge of English is closely linked to the broader theme of professional skills. As illustrated in the previous deliverables, the INNOWISEs Platform provides an entire section for the management of skills in which, depending on their level, it will be possible to identify training courses. According to the same approach used in the framework we can define a qualitative scale in which to place the level of skills of the WISE. Thinking again of a 3-level scale:

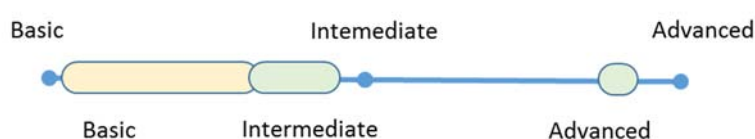
- the **basic level** is characterized by the possession of basic skills that have guaranteed the possibility of being born and inserted within the market but characterized by purely social background,
- an **intermediate level** in which managerial skills are present and developed at basic level



- an advanced one in which there are managerial skills and widespread among the management line.

It should be noted that this scale serves only as a reference to identify a possible reference model and that the detail of its level will be available through the assessment to be carried out using the skills management platform.

## Competence level

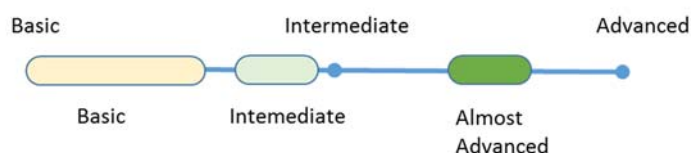


Finally, the technological start-up level of the company is to be considered, that is, the status as is of the technological systems present both in terms of application support and of technologies used for the provision of its services or products. With the same approach it is possible to define three levels:

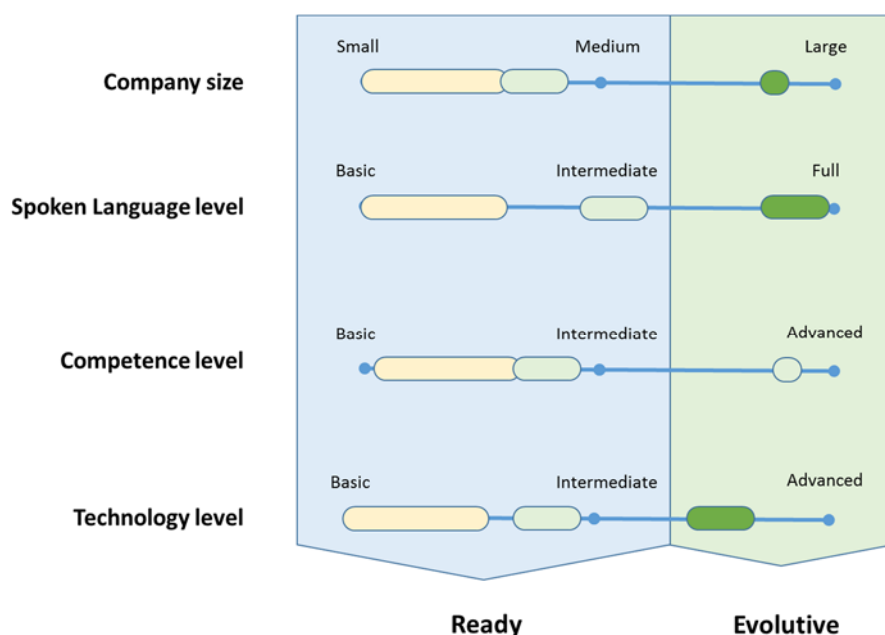
- base in which there are only some tools to support basic activities
- intermediate in which tools are also available to support management activities
- advanced in which complex and structured tools are available but not state of the art.

We anticipated that one of the elements that characterizes the company in its technological and business evolution is linked to the field of activity in which it is located or even the market. From the project proposal it was decided to focus the platform on support to companies operating in the field of tourism, agriculture, waste and recycling. These four fields represent themselves of the categories in which the WISEs will be identified.

## Technology level



To compare with the models above, we can identify two potential WISE profiles we could call them "ready" and "evolutive".



In the "Ready" cluster we can consider those small and micro-sized companies where the knowledge of the language is purely local with some basic knowledge and the basic technological level.

Instead in the "Evolutive" cluster are included the largest companies which need to make an evolutionary leap. In particular, in the management there are some figures in which there is at least an enabling knowledge of the use of tools in English up to those with high levels of proficiency. Moreover the level of technology, is not limited to basic support, but there are large and complex tools that must be updated to the most advanced logic. Finally, from the Competence level point of view, on average is pretty high.

## 4. PLATFORM CONFIGURATIONS

This section contains the possible configurations of the platform that can be implemented with respect to the defined variables.

Starting from the architecture, but above all from the functional modules identified, configurations or specificities can be defined.

As illustrated by the context analysis and the literature, the information systems of companies take on specific configurations according to different variables, be they contextual or company specific. Analyzing at a greater level of detail, we have seen how in reality all the companies are attributable to a model, like that of Porter, where some business divisions are more relevant than some others.

In the same way, we can say that a "package" can be identified of sistemi common to all companies and a set of specific systems to support the core business of the company and the reference / market sphere in which they operate.

The other element to be taken into consideration is the way in which they are inserted within the application support of companies and therefore of the function that they will perform. It goes without saying that a certain type of instrument will be associated with the importance for the company.

Starting from these considerations, below is described how the platform can provide different tools according to specific needs.

First of all, it is necessary to clarify that the INNO-WISEs Platform aims to provide tools that complement and, where necessary, replace tools and applications that are already part of the business endowment. The Platform must therefore be seen as a supplier of instruments supplied in SaaS mode that can be used by end users.

As illustrated in the previous deliverables, the platform consists of two main elements: the Marketplace and the Framework for Competence Management.

### 4.1. Platform configurable components

As illustrated in the previous deliverables, the platform consists of two main elements: the Marketplace and the Framework for competence management.

Also in this document we will describe the two areas as distinct entities between which, however, there is a strong link. The principle on which the marketplace is based is to offer a wide range of products and solutions according to the market supply and WISE needs. On the other hand, the skills management platform is designed to offer training courses on different issues and increasing levels of detail and depth, once again to meet different training needs and then provide the basic tools and from the other enable the development of complex skills and a target of people belonging to the highest managerial levels.

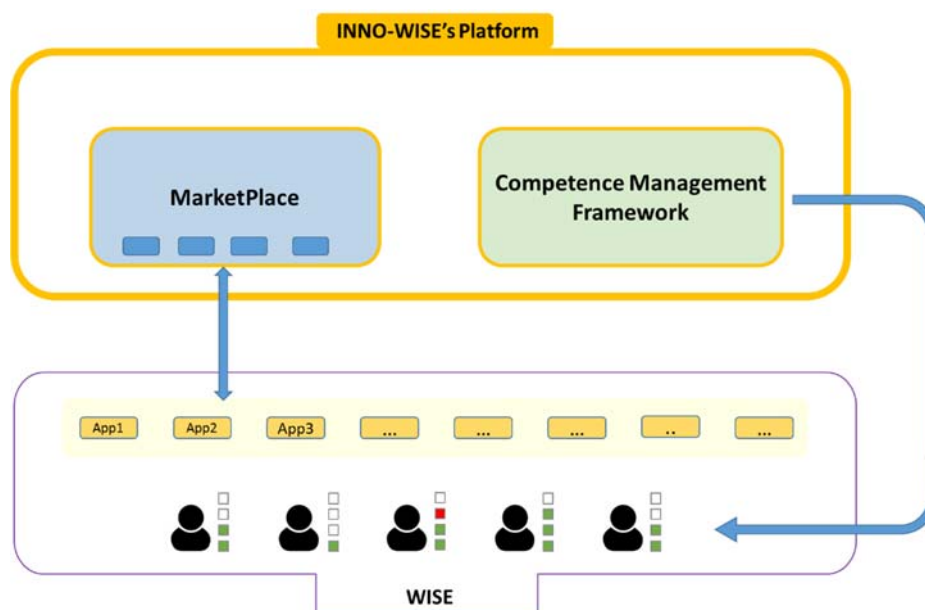


Figura 2 Example of interaction between Platform and WISE

The image above shows clearly the two modules that constitute the Platform and the entities of the WISE on which they impact. The marketplace will provide tools that can be included in the application support of companies and from which we will define some models. On the other hand, regarding the competence management framework, we summarize, in the following paragraph, the approach defined by ACT Group, for the definition of learning paths and training areas.

## 4.2. ICT tool configurations

As previously mentioned, the tools offered by the platform will represent the different needs of companies, providing both a basis for supporting business activities but characterized by simplicity of use but at the same time limited range of support for activities.

Although the concept of marketplace intrinsically implies the logic of configuration being able to acquire one or more systems on the basis of specific needs and especially of the application scenario in which they will be inserted, in this section we describe the possible scenarios of adoption of the tools offered and the relevance they will assume for businesses. In this phase and with respect to this setting it would have been difficult to identify a possible configuration by single means, so we decided to give a different point of view, leaving the individual reality to identify the specific tool also according to the profile in which it is identified (cf. chap 2)

### Scenario 1 - Digitalization

The first scenario, therefore, provides for the acquisition of simple tools that support activities defined and whose knowledge is consolidated within the company. This type of approach can be useful for those situations where it is necessary to insert an application support where the provision of the activities is conveyed through manual procedures and through paper supports.



### Scenario 2 - Evolutionary

A second scenario instead, called evolutionary, takes into consideration the idea of replacing an already existing application support that however no longer meets the needs of the company or due to obsolescence or because in the meantime the company has had the opportunity to evolve significantly. These are therefore instruments with a good level of functionality and with a certain amplitude of support to the process. This type of application targets companies with a good level of both organizational and business maturity as well as the large number of resources employed.

### Scenario 3 - Hybrid

A third scenario that can be defined as "Hybrid" provides a combination of both the previous approaches in which some instruments will support activities carried out to date manually or not considered of fundamental importance while others will be chosen to replace instruments no longer valuable for the enterprise. This scenario may be relevant for those companies in which there is a good level of skills and consolidated experience that allows the line direction to correctly identify the areas on which an evolution is needed and those in which, being uncovered until now is necessary an injection of application support.

In chapter 4, on the other hand, the mapping between the possible adoption scenarios and the WISE profiles identified is reported.

## 4.3. Competence Management configuration

The skills management platform, as we illustrated in the previous deliverables, consists of several components: the assessment framework and the definition of the growth objectives on the basis of which it is possible to identify the starting level, the desired target level and the gap between fill up. Starting from the areas of expertise identified through the gap, it is necessary to map the training modules and, in general, the contents to be acquired to fill the gap. To complete the picture the training contents will be erased in interactive mode and in particular, good part of them through MOOC. The work developed by ACTGroup aims to identify the correct training path and its contents based on the size of the training gap and the starting level.





SUSTAINABILITY (AND INNOVATION) - 1Strategy	SUSTAINABILITY (AND INNOVATION) - Generate attention & Relationship	SUSTAINABILITY (AND INNOVATION) - Initiate business	SUSTAINABILITY (AND INNOVATION) - Deliver value	>+TOOLS integration >lead attribution >ERP integration
GROWTH - 1Strategy	GROWTH - Generate attention & Relationship building	GROWTH - Initiate business	GROWTH - Deliver value	>advanced CRM >marketing autom. >lead nurturing & sc. >retargeting
ROLLOUT - plan campaign	ROLLOUT - build/launch	ROLLOUT - measure/refine	ROLLOUT - Grow (intro)	>CRM light + CMS >SM monitor (simple) >advanced advert. >mail autoresponder
CREATION - Experiment & Choose	CREATION - Execute	CREATION - Measure (intro) & Pivot or Persevere	Finance & HR - depth level: 1	>mail broadcasting >sales landing & opt. >simple advertising >SM management
DISCOVERY - Begin & Define	DISCOVERY - Learn (intro)	Practice in sales - case studies	Finance & HR - depth level: 2	>workflow manag. >project management >time management >invoicing/proposal
Basic (intro)	Marketing practice tricks	Practice in sales - personal skills	Finance & HR - depth level: 3	>collaboration >communication

Fig: 3 ACT Group'Framework for training path definition

The aim is to build a Hybrid online platform bringing interactive (1) ICT business tools catalog joined with appropriate (2) dynamic, customised and WISE-adapted educational MOOC program, which is rising managerial and operational WISE capacities to implement lean/agile business methodology inside their real-life entrepreneurial experience, for their real-life product/service, new or existing, B2B or B2C oriented. They call them 1GRID+

The framework proposes a holistic approach to the management and definition of the business as well as to the configuration of the application support and the relative path of acquisition of skills. The idea is that management focuses on defining a strategy focused on the enhancement of its product / service and that therefore the entire company is enslaved to achieving this goal.

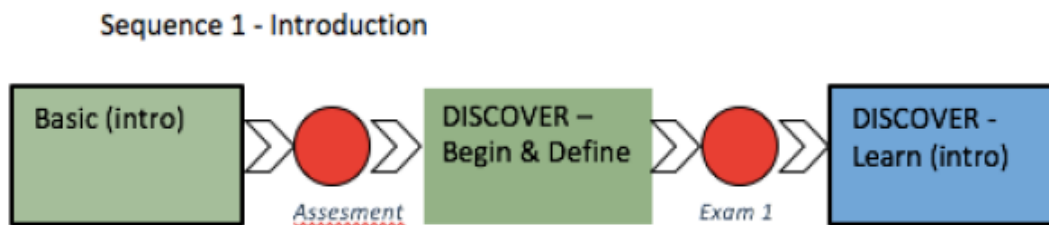
There are 4 levels or stages divided as follows:

- Priority: 1+ stage - STRATEGY(weight: 4)
  - Experiment & campaign definition, planning and budgeting; market positioning, branding
  - Advanced overview and implementation tricks
- Priority: G&R stage - Getting attention and Relations building (weight: 3)
  - Advanced push and pull digital marketing techniques, content creation and digital presence integration
  - Marketing automation, lead nurturing and scoring
- Priority: I stage -Initiate business (weight: 2)

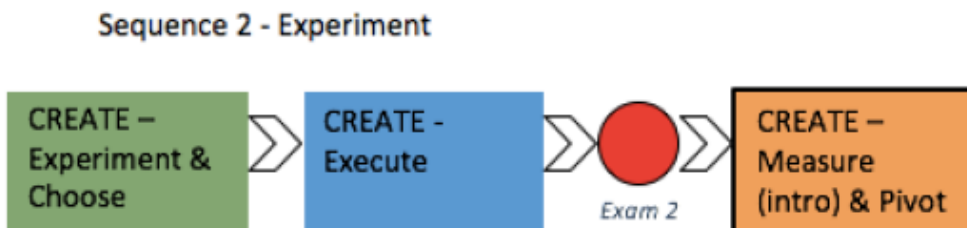
- Measurement and metrics
- Sales operations integration, lead attribution
- Priority: D stage -Deliver value (continuously) (weight: 1)
  - Finance planning and HR
  - Retention and advanced management

Based on the internships defined above, 9 sequences or learning paths have been identified as shown below:

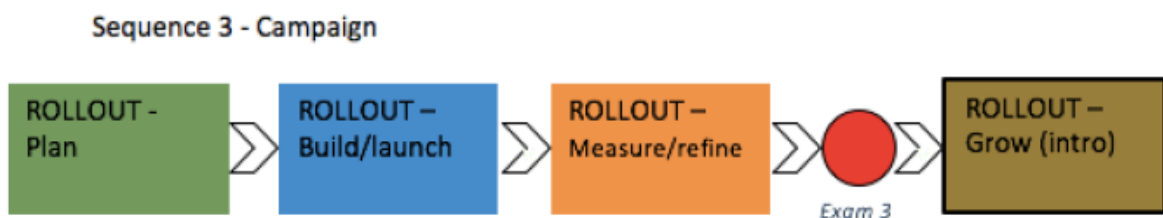
#### Sequence 1 - Introduction



#### Sequence 2 - Experiment



#### Sequence 3 - Campaign



#### Sequence 4 - Basic sales/ marketing tools

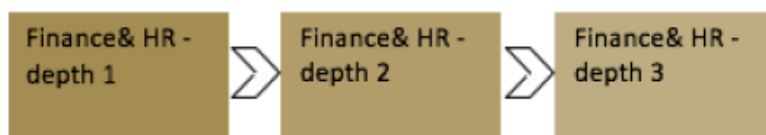


#### Sequence 4 – Basic sales/marketing tools



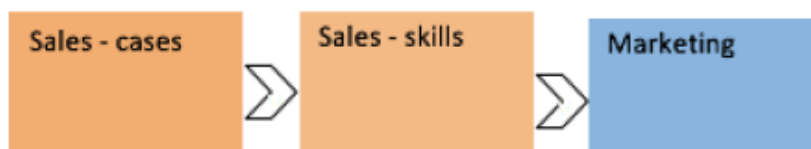
#### Sequence 5 – Finance & HR

##### Sequence 5 – Finance & HR



#### Sequence 6 – Practice

##### Sequence 6 – Practice



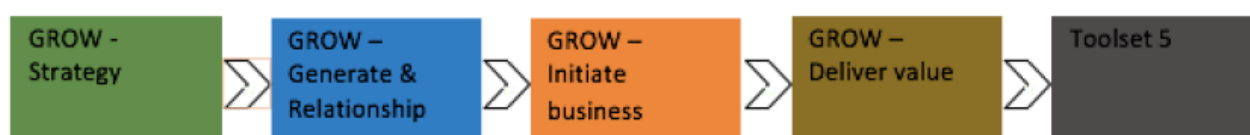
#### Sequence 7 – General tool (option to skip)

##### Sequence 7 – General tools (option to skip)



#### Sequence 8 – Growth upgrade (decision to proceed expected)

##### Sequence 8 – Growth upgrade (decision to proceed expected)





Sequence 9 – Sustainability and innovation upgrade (decision to proceed expected)

Sequence 9 – Sustainability and innovation upgrade (decision to proceed expected)



As can be seen, the different paths defined respond to incremental needs and provide paths that go from the basic level that acts as an "introduction", passing through those of "experimentation" up to the highest ones for "growth" and support for the regime.

The defined paths will be clearer when the contents that will be associated to the specific modules provided will be precisely defined.

However, it is clear that this approach satisfies the various training needs of the companies as well as the heterogeneity of the level of skills that will result from the assessment of the individual companies.



## 5. CRITICAL ANALYSIS OF THE RESULTS

In this section we describe a possible mapping between the WISE profiles and the configurations of the two main modules.

Although strictly linked for clarity, the mapping is reported between each profile and the platform component.

In chapter 2 we defined 2 possible profiles, that of "Ready" companies and that of "Evolutive" companies.

Looking at the skills management and definizoined module and the learning paths we could say that the "Ready" companies will be able to give themselves as a growth target what is foreseen by the sequences ranging from 1 to 7. Obviously this must take place gradually and guaranteeing to have acquired the provisions of each module also through the formalization of the passing of the tests required at the conclusion of specific modules. The path for the "Evolutive" will therefore focus on sequences 8 and 9 which provide for the development of evolved skills. It remains valid that although they will have to focus on the higher levels it may be of significant value to go through all the levels to ensure that they have carried out a coherent and homogeneous path.

Finally, looking at the scenarios identified in chapter 2, we can hypothesize that many of the "Ready" companies will implement a "Digitalization" scenario by filling in some basic gaps and providing support that they did not already have before. Rather, it is reasonable to think that companies with an "Evolutive" profile can implement scenarios like "Evolutionary" going to make the evolutionary leap that allows them to compete effectively on the market and make their proposition comparable with private companies of equal number in terms of employed persons.

In the same way, the most advanced companies will be able to implement the hybrid scenario as they will have achieved awareness and a clear picture of their business and will be able to correctly identify the areas for which a first digitization step is necessary and those in which an aware switch is made. the complexity and risks associated with such a structural change and for which a change management process is envisaged.

It is clear that the above has the objective of giving a first reference, of the highest level, that can help companies approach the tools of the platform and the correct use. The greater ability in identifying both the application support and the path of formation will come with access, experimentation and use of the tool. The perception of skills will then allow you to expand and develop your skills and ultimately acquire the knowledge that will allow you to select the tools deemed most necessary and implement them in the right way.



## 6. CONCLUSIONS

From the literature it emerged that some context factors ranging, in short, from the knowledge of English to the specific area in which companies operate, passing through the level of managerial skills possessed by the company, significantly impacting the development of the enterprise at all levels, particularly in the evolution of the information system and entrepreneurship of enterprises.

Starting from these considerations, variables have been defined that are significant for the company and for the full exploitation of the potential of the platform. Two main profiles have been defined: Ready and Evolutive. The first is associated with companies with a limited number of resources employed, an average low level of managerial skills and limited application support, or even manual or paper handling.

Possible scenarios were defined for the introduction of the systems provided by the platform. 3 "Digitalization" "Evolutionary" and "Hybrid" have been defined. The first provides for the inclusion of systems that compensate for the complete absence of tools to support the process, while the second provides for the replacement of systems that are no longer considered appropriate for the activities that take place and the third envisages a mixed approach combining the two previous cases. It has also been hypothesized that the first approach is compatible with ready-type companies and the second two for companies belonging to the "Evolutive" profiles.

With the same approach, a mapping has been hypothesized that links the sequences of the acquisition of skills to business profiles associating the "ready" sequences from 1 to 7 and "Evolutive" the last two sequences.

The models defined within this deliverable can be a useful reference for companies that approach the use of this platform, giving them the possibility to orientate themselves on a complex tool such as the INNO-WISEs Platform.

During the experimentation, companies will be able to test the effectiveness and possible limits of the current solution by providing feedback for the evolution of this tool.



## 7. REFERENCES

[1] "A review of frameworks for classification of information systems, notably on the Anthony's Triangle" - Joseph Kim-Keung ho - european academic research Vol. III, Issue 1/ April 2015

<http://euacademic.org/UploadArticle/1562.pdf>

[2] "Information Systems and Strategy, Session 1, Types of Information System and the Classic Pyramid Model" - Euromed Marseille School of Management, World Med MBA Program - Information Systems and Strategy Course

[http://www.chris-kimble.com/Courses/World\\_Med\\_MBA/Types-of-Information-System.html](http://www.chris-kimble.com/Courses/World_Med_MBA/Types-of-Information-System.html)

[3] Bacon C.J. (1992). The Use of Decision Criteria in Selecting Information Systems/Technology Investments. MIS Quarterly

[4] Cioppi, M. & Savelli, E. (2006) ICT e PMI. L'impatto delle nuove tecnologie sulla gestione aziendale delle piccole imprese. Genova: ASPI/INS

[5] Kagan, A., Lau, K., & Nusgart, K.R. (1990) Information system usage within small business firms. Entrepreneurship Theory and Practice

[6] "I Sistemi Informativi automatizzati a supporto dei processi di direzione aziendale. ancora un ritardo cronico per le piccole imprese?" - Ciambotti, Aureli, Giampaoli (2012)

[http://www.academia.edu/17401457/I\\_sistemi\\_informativi\\_automatizzati\\_a\\_supporto\\_dei\\_processi\\_di\\_direzione\\_aziendale.\\_Ancora\\_un\\_ritardo\\_cronico\\_per\\_le\\_piccole\\_imprese](http://www.academia.edu/17401457/I_sistemi_informativi_automatizzati_a_supporto_dei_processi_di_direzione_aziendale._Ancora_un_ritardo_cronico_per_le_piccole_imprese)

[7] ICT Development Index (IDI) - <http://reports.weforum.org/global-information-technology-report-2016/networked-readiness-index/>

[8] Networked Readiness Index (NRI) -

<http://www.itu.int/net4/ITU-D/idi/2017/index.html#idi2017rank-tab>

[9] Benjamin, R.I & Blunt, J. (1992) Critical issues: the next ten years. Sloan Management Review.

[10] Enterprise Information Systems -Chapter 10 Link Library

[https://nscpolteksby.ac.id/ebook/files/Ebook/Computer%20Engineering/Information%20Technology%20for%20Management%208th%20edition%20\(2011\)/13.%20Chapter%2010%20-%20Enterprise%20Information%20Systems.pdf](https://nscpolteksby.ac.id/ebook/files/Ebook/Computer%20Engineering/Information%20Technology%20for%20Management%208th%20edition%20(2011)/13.%20Chapter%2010%20-%20Enterprise%20Information%20Systems.pdf)

[11] "Business Intelligence" - Alessandro Rezzani- 2012 Apogeo

[http://www.apogeoonline.com/2012/libri/9788850331055/ebook/pdf/3105\\_capitolo1Estratto.pdf](http://www.apogeoonline.com/2012/libri/9788850331055/ebook/pdf/3105_capitolo1Estratto.pdf)

[12] European e-Competence Framework- <http://www.ecompetences.eu/it/>