VALO$_5$ – Innovation, Maturity Growth, Quality and Valorisation

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Abstract. Organisations and individuals maximise the likelihood of success through managing innovation. Ensuring the high quality of both process and product, sustaining and exploiting innovations creates value to the stakeholders. In this paper we explore the nexus of maturity, quality and valorisation. We consider that the growth of organisational maturity changes the nature and role of quality management and characterises valorisation. We propose a Valorisation model based on the INCISIV framework (which incorporates the PDCA Deming Improvement cycle) and the CMMI model for understanding, evaluating, measuring and improving the valorisation process, and the valorisation results.

Keywords: PDCA, INCISIV, CMMI, Valorisation, VALO.

1 Introduction

According to Trott [1] "*Innovation is not a single action but a total process of interrelated sub-processes. It is not just the conception of a new idea, nor the invention of a new device, nor the development of a new market. The process is all these things acting in an integrated fashion. … Innovation is the management of all the activities involved in the process of idea generation, technology development, manufacturing and marketing of a new (or improved) product or manufacturing process or equipment*". Often organisations, projects and individuals fail to gain adequate value let alone added value from their innovations. On European Union (EU) level '*the term 'added value' is a centrepiece in contemporary debates on the reform of the EU budget. Both at the academic and the political level, calls are being made to revise EU spending on the basis of added value considerations. Yet, as pointed out by many observers, the notion of added value lacks conceptual clarity*' [2]. Nevertheless, the EU funds an enormous number of projects whose outcomes are poorly exploited. In particular projects consisting of purely research oriented and/or technically oriented partners seem to lack awareness of the importance of

dissemination, exploitation and valorisation for sustainable development and skills in carrying out such activities [3]. The VALO project[1] intends to address this issue.

The rest of this paper will proceed as follows: First we outline the key features of the two main elements of interest in this study: Valorisation of Innovation and Maturity Models. We present a valorisation maturity model 'VALO5' that builds on the InCISIV framework which includes the Deming PDCA-cycle for improvement. Finally we draw some conclusions and outline further work

2   Adding Value to Innovation Through Valorisation

Value attributable to many innovative projects tends to run out in relation to the allocated funding [4]. Thus the value created is not sustained beyond the lifetime of the project. Effective innovation should not only facilitate the creation of value but should also ensure that such value is sustained and shared to its optimum potential. In particular projects consisting of purely research oriented and/or technically oriented partners seem to lack knowledge of the importance of dissemination, exploitation and valorisation for sustainable development [3]. There also seems to be a gap in skills for carrying out actions of dissemination and exploitation. The European Union recently responded to this challenge by funding a specific 'Valorisation' project – here after called VALO. *'Valorisation is defined as the process of sustaining value created through innovation and hence optimising its impact among the direct and indirect beneficiaries' [5]*

The rationale for the VALO project is derived from the observation that many projects are often carried out in isolation and hence they provide very little or no lasting impact. These projects tend not to imagine or plan for continuing dissemination and exploitation of their results and deliverables beyond the allocated funding period; and even when they do, there is little evidence that they succeed The impact/benefit of a sustainable project translates into added value gained by a diverse group of stakeholders and/or specific target groups well beyond the lifespan of the project. All projects therefore, need to valorise their results for maximising achievements and increasing sustainability after their completion.
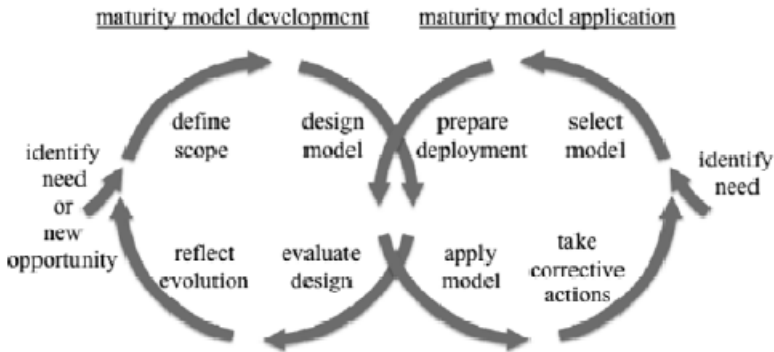
3   Maturity Models

Mettler (2009) studied the parameters needed for the development and application of a maturity model and presents a meta-model of the parameters needed by showing the development process and the application process in two overlapping circles (Figure 1).

Mettler [6] argued, that "*the development of the maturity model is intimately connected with the application phase and therefore should not be reflected separately*". The reason is that the order of the phases impacts on the application of the model.

[1] http://www.ecqa.org/index.php?id=294   and   valo.it.teithe.gr

Fig. 1. The parameters of the maturity model development & application process (source Mettler, 2009)

Hain and Back [7] identified 55 maturity models in the area of collaboration, knowledge management and e-learning. They distinguished three categories of maturity models, namely: scientific, practitioner-oriented (scientific), and practitioner-based. Most of the maturity models were derived from the per se standard Capability Maturity Model (CMM) [8] and later on Capability Maturity Model Integrated (CMMI), but, only a few were adequately documented to be further evaluated or applied in practice. They also assert that "*non-CMM-based maturity models are rather chaotic and leak in an appropriate form or functioning*". They conclude that an activity is always connected to a maturity level, which means that along the maturity range different topics / activities are of relevance. As a result the required activities change with increased maturity. They argue that this implies that a maturity model is rather a maturity process.

Process capability growth in organisations is depicted in all known maturity models in a ladder-like diagram suggesting an ascent from lower steps to higher steps. In [9] we studied the relationship of maturity and knowledge sharing which in turn improves performance.

4   Building on the InCISIV Framework

Under the auspices of the VALO project, we developed the InCISIV framework [9] which facilitates the study of the relationships between Innovation, Communication and Valorisation. The Deming Plan-Do-Check-Act Cycle, also called PDCA cycle [10] is embedded in this new process quality model in an effort to focus project managers, project teams as well as evaluators to identify, plan, monitor, evaluate, improve and manage the valorisation project. The framework is depicted in figure 2 and shows two cycles which interact at every stage, delivering outputs incrementally. InCISIV allows for agile responses to change, planning the quality strategy, continuous reviewing and evaluation of project progress and quality of deliverables as well as improvement suggestions
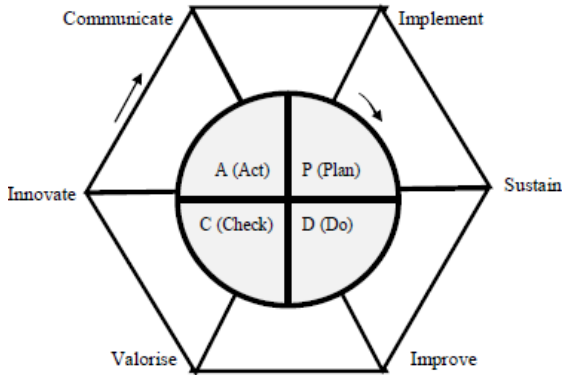
Fig. 2. The InCISIV framework [9]

At each stage activities are planned, carried out, outputs are evaluated and processes improved. The quality of outputs is thus continuously monitored, and sustainability is improved. However, we did not venture into looking at value-adding activities beyond the lifetime of projects. Experience from the software industry, where many different maturity models, such as CMMI and ISO 15504 are used for measuring and improving organisational performance, has demonstrated that the more mature an organisation is in terms of following best practices, the higher is the workforce awareness of organisational aims and objectives and the more committed is the workforce to holistic and strategic perspectives. On one hand organisations need to have a process to follow in order to know what to do when difficulties arise. On the other hand the processes need to be flexible enough to allow for agility and innovation. Maturity Modelling is a generic approach that describes the development of an entity over time progressing through levels towards an idealistic ultimate stage (Khoshgoftar and Oshman, 2009). Expressed in terms of direction towards the ultimate goal the maturity model shows the remaining distance to reach the ultimate goal. However, as shown in the InCISIV framework every stage goes through the PDCA cycle and slowly the journey approaches its ultimate goal via different levels that have different characteristics. It is not possible to run before you can walk. Similarly all the steps have to be completed in order to reach a higher level.

5   VALO$_5$ Maturity Model

The VALO$_5$ Valorisation Maturity Model (Figure 3) represents the maturity level that characterises a Valorisation process and its likelihood of success within a project team, an organisation, group or partnership. The circles underneath each step (level) depict the PDCA circle. Without improvement in each step it is not possible to reach the following level. The partners in a project team, an organisation, group or partnership can go in several circles without improving enough to reach the following level. It takes awareness and commitment to mature and usually this is a long process.
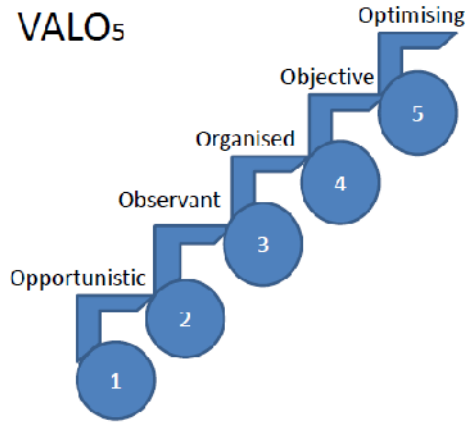
Fig. 3. The VALO$_5$ Maturity Model

VALO$_1$ Opportunistic Level. At this ad-hoc maturity level the success of the process depends on 'heroics', individuals with flair, new ideas, so some innovations may be produced but exploiting them and sustaining their value is also incidental and opportunistic. Knowledge (mostly tacit) is not shared; the individuals are not recognised or rewarded. Value is thus unlikely to be gained from the current or future projects

VALO$_2$ Level. At this repeatable maturity level good practice is identified. Previous successes can be repeated. Knowledge is thus shared within project teams which can apply this knowhow to subsequent projects. Innovators start to be recognised and encouraged. Observing previous successes can improve the chances of valorisation success.

VALO$_3$ Organised Level. At this managed level processes are organised and deployed systematically across projects. Roles and responsibilities are specified and plans together with Key Performance Indicators and targets are developed and established. Valorisation forms an integral part of the management process. Knowledge is shared across projects. Innovators are rewarded.

VALO$_4$ Objective Level. At this measured maturity level data are collected, innovators are recognised and rewarded and systematically sponsored, knowledge is shared across the whole organisation. Exploitation of innovations is institutionalised. Innovations can be sustainable and successes are objectively measurable.

VALO$_5$ Optimising Level. At the optimising level data are collected, analysed, interpreted and knowledge is shared at all levels (teams, projects, departments, partners, stakeholders). Evaluation and feedback is institutionalised. Valorisation is planned, organised, funded and deployed across groups, departments, the whole organisation and across partnerships/consortia. Value-adding activities continue beyond the completion of projects resulting in sustained improvements.

6   Conclusion and Further Work

This study arose from the VALO project which realised the need to provide support for sustainability of innovations. In this paper we presented the VALO$_5$ Model which together with the INCISIV framework can help set the foundations initially for the successful Valorisation of the actual VALO project but also of other EU projects and projects in organisations. Future work will involve the deployment of the model to both industry and academia for the scientific validation through the collection of multi-case study data.

References

[1] Trott, P.: Innovation management and new product development, 4th edn. Pearson Education Limited, Edinburgh (2008)

[2] Eulalia, R.: The "added value" in EU budgetary debates: one concept, four meanings. Notre Europe (28) (2011), `http://ftp.infoeuropa.eurocid.pt/database/000047001-000048000/000047220.pdf` (accessed March 15, 2013)

[3] Siakas, K., Messnarz, R., Georgiadou, E., Naaranoja, M.: Launching Innovation in the Market Requires Competences in Dissemination and Exploitation. In: Winkler, D., O'Connor, R.V., Messnarz, R. (eds.) EuroSPI 2012. CCIS, vol. 301, pp. 241–252. Springer, Heidelberg (2012)

[4] Sheriff, M., Georgiadou, E., Abeysinghe, G., Siakas: INCUVA: A meta-framework for sustaining the value of innovation in multi-cultural settings. In: EuroSPI 2013 (accepted)

[5] Della Corte, V., Savastano, I., Storlazzi, A.: Service innovation in cultural heritages management and valorization. International Journal of Quality and Service Sciences 1(3), 225–240 (2009)

[6] Mettler, T.: A Design Science Research Perspective on Maturity Models in Information Systems, BE IWI/HNE/03, University of St. Gallen, St. Gallen, Switcherland (2009)

[7] Hain, S., Back, A.: State-of-the-art on Maturity Models for Collaboration, Report Number: 01/2009, Universität St. Gallen Hochschule für Wirtschafts-, Rechts- und Sozialwissenschaften (HSG), Switcherland (2009)

[8] Paulk, M.C., Curtis, B., Chrissis, M.B., Weber, C.V.: Capability Maturity Model, Version 1.1. IEEE Software 10(4), 18–27 (1993)

[9] Siakas, K., Georgiadou, E.: Towards Maximising the Quality of Social Impact through Valorisation of LLPs. In: Valtanen, J., Berki, E., Ruohonen, M. (eds.) Eduaction Matters, INSPIRE XVII, pp. 89–100. The British Computer Society (2012)

[10] Deming, W.E.: Out of the Crisis: quality, productivity and competitive position, Massachusetts, USA (1986)