



# Strategic and Operational Governance in online learning: the case of the Universitat Oberta de Catalunya

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## Abstract

This paper discusses the design and implementation of strategic and operational ICT governance at the Universitat Oberta de Catalunya (UOC), a fully online university based in Barcelona, Spain. Governance is shown as a maturity process taking place in recent years, from top-down strategic planning to co-responsibility mechanisms set up between business (management and academy) and IT.

On the strategic level, the organization relies on (a) a robust strategic information systems plan that shields long-term investments and annual funding; (b) a corporate governance body which represents major stakeholders; and (c) a stable funding mechanism for IT investments over time.

In the case of operational governance, portfolio management decisions have been devolved to committees representing major business processes, and new prioritizing procedures following agile models have been put in place. These committees also monitor execution and return on investment.

Lastly, this model has been evaluated through a survey among all participants. We show the results of the assessment.

## 1 Strategic ICT governance and investment decisions

In the context of higher education, digital transformation goes beyond integrating new technologies into the teaching-learning process; rather, it impacts on other fundamental processes such as research, academic, financial management, marketing, and sales.

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In this scenario, “decisions about where, how, and when to invest” – to quote Peppard and Ward (2016) – become crucially important, mainly if we are to ensure that investments in technology are aligned with an institution's strategy. Program Portfolio Management appears to be the link between strategy and execution, to ensure consistency, to update the plan on a continuous basis and to foster ownership and co-responsibility among major stakeholders (Cleland, 1999; Thiry, 2010). IT Governance specifies “the decision rights and accountability framework to encourage desirable behavior on the use of IT” (Weill and Ross, 2004).

On the other hand, agility-based models have become "mainstream" among information system production methods (Wysocki, 2011), but not that much on planning, prioritization and the management of the whole portfolio of IT assets. Scaled agile frameworks (such as SAFe, 2021) are intended to better align development deliverables with business goals and customer needs. Because of this, their implementation at large (Leybourn, 2013; Narayan, 2015) implies a culture change that affects the entire organization, extending far beyond the confines of the IT department.

Taking into account these main issues, corporate ICT governance refers to the distribution of rights over ICT management decisions that must be taken *outside* the Technology department, and should be seen as a way to evolve the maturity of the organization in its relationship with technology. In the case of the UOC – a fully online university with 75.000 students based in Barcelona (Spain) - corporate governance has been implemented over the last years on a continuous basis. We can highlight the following milestones:

- 2013: UOC Strategic Plan 2013
- 2014: Information Systems Master Plan 2014
- 2015: New IT Management 2015
- 2016: Master Plan Review 2016
- 2017: Corporate Governance Model and Financial Model 2017
- 2018: Operational Management Model
- 2019 - 2022: Demand Management Model – Agile Transformation Plan

An account of the UOC IT strategic management approach has been provided by Rodríguez et al. (2019).

Since ICT governance is considered to be a critical process within the institution, the corporate bodies can act as delegates of the Management Committee or the Governing Council, bringing a global perspective to the institution's interests and objectives. Therefore, corporate governance aims to:

- Facilitate strategic and operational alignment between business and technology and focus ICT actions on capturing value.
- Improve decision-making.
- Guarantee the commitment of the business areas to their ICT objectives, projects, and services.
- Establish a relationship of trust and transparency between management departments, faculties and Technology.
- Aid communication in the different spheres of management and faculty..

An ICT Monitoring Committee (ICTMC) is responsible for overall ICT strategic management at the UOC. Its members consist of the most senior representatives (vice chancellors and chief officers) from the major functional areas of the University. (learning, research and management support). The Chief Executive Officer (CEO) chairs the Committee and the meeting sessions are prepared and coordinated by the most senior person in the Technology department (CIO). Next table represents on a RACI matrix the major activities charged to this body.

|  | Proposes | Decides | Is consulted | Is informed |
|--|----------|---------|--------------|-------------|
| Overall economic and budget framework                | X        |         |              |             |
| Allocation of resources and prioritization criteria  |          | X       |              |             |
| Approval of critical changes and conflict resolution |          | X       |              |             |
| Monitoring of MP and critical projects               |          |         |              | X           |
| Evaluation of results and impact                     |          |         |              | X           |
| Communication plans and action                       |          | X       |              |             |
| Establishment of critical services and SLAs          |          |         | X            |             |
| Principles and policies of IT management             |          |         |              | X           |
| Policies and plans to manage technological risk      |          |         | X            |             |
| IT corporate governance                              | X        |         |              |             |

**Figure 1:** Monitoring ICT Committee (ICTMC) functions

This body distributes investments on to different programs on an annual basis, that may be reviewed every four months. Some big strategic investments are shielded or protected and cannot be modified at the program (operational) level.

## 2 Operational ICT Governance

Once well established processes of IT corporate governance were put in place, three key elements aroused the need of a new operational model of ITC governance:

- **The time between the detection of a need and the deployment of the solution was too high**, involving risks of lost opportunities or legal non-compliance.
- **The current development model, based on closed projects, made hard to include modifications during the project cycle.** As a result, we use to have a lack of alignment between the need identified and the solution provided.
- **Management and Academic Management do not participate on a stable, continuous basis in the process of prioritizing needs, nor in all project phases:** that bring dissatisfaction due to unfulfilled expectations.

Among middle management and final users, there was the feeling that decisions on IT didn't scale down the ladder to solve their specific needs and that major strategic initiatives didn't consider medium and small size demands.

In the following sections we explain the initial definition process of our operational model, the model's key traits and their phases and timeline.

## 2.1 Initial definition process

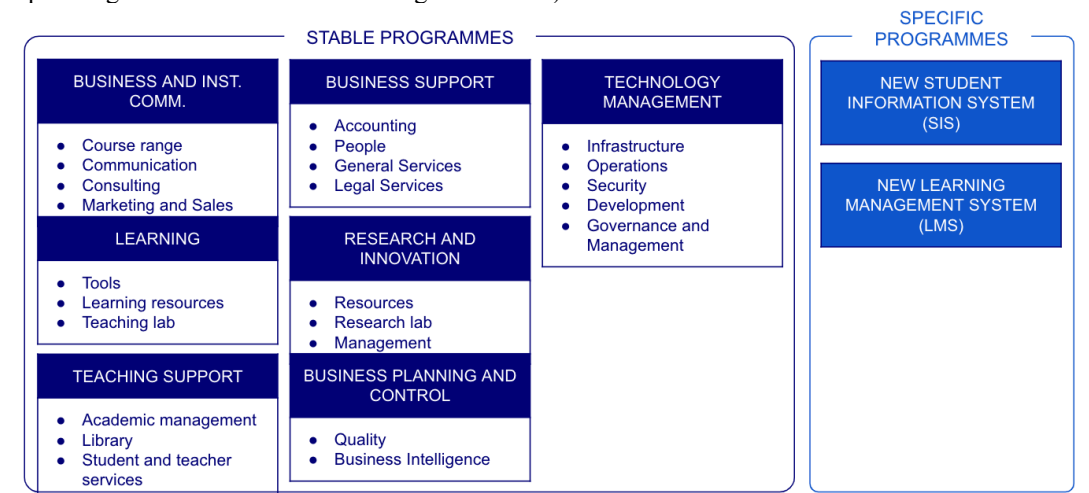
The initial definition process of the operational governance took a brief time period, and it was carried out over six months. In order to do its definition we followed an iterative approach, with two phases of iteration:

- Discussion and improvement of the initial design, inspired on scaled agile frameworks for portfolio management (SAFe, 2021).
- Discussion and improvement of the implementation model.

The model was designed by the IT professionals themselves through the creation of a specific work team, with project managers, demand managers, and other key roles for developing initiatives, and with the management and guidance of experts (both academic and professional) in agile IT portfolio management. Moreover, the approach and scope was confirmed with the main stakeholders, and formal approval of the model was done by the ICT Monitoring Committee.

## 2.2 The model's key traits

The first trait of this operational ICT Governance was starting to speak about *initiatives* – and not projects – which were recorded on a continuous basis and were structured into programs corresponding to the processes of the value chain of an online university. It also includes two specific programs corresponding to transformational initiatives with a wide scope (those that were shielded or blocked by top management at the ICT Monitoring Committee)



**Figure 2:** Structure of the IT portfolio based on the University value chain.

Program committees are composed with members from Management Support, Academic Management, and Technology, and are created to prioritize the needs of each program, monitor its execution, and be accountable for the results.

There are three key roles/functions within each program team: business owner – from business areas – and business partner and program owner – from IT department - with shared responsibility for reaching objectives. Each program will also have a sponsor from the C-level, who will ensure the alignment with institutional strategy.

Following strategic criteria, the ICT Monitoring Committee allocates the budget and validates the objectives and indicators set for the development of each program. The ICTMC determines whether there are any initiatives that must be protected (bulletproof initiatives) within each program and can allocate the remaining portion of the budget (that which hasn't been assigned to bulletproof initiatives) to other initiatives that are aligned with the defined objectives.

The initial scope of the implementation was for the processes of demand management. More recently, we are launching pilot projects of agile software development for certain groups of products within more mature programs.

### 2.3 Phases and timeline

This **Portfolio Management** through programs is the key point of this first phase, already implemented, of the new operational model. Having a revised portfolio structured into programs - through the definition and prioritization needs in program committees - a program investment proposal is submitted to the ICTMC. After investment decisions at strategical level, program committees create the ICT Plan in accordance with investment and priorities.

Next we present a top level schedule of the major phases of the process.

| Main activities  | September | October | November | December | January |
|--|-----------|---------|----------|----------|---------|
| Recording of demand by departments   | ■         | ■       |          |          |         |
| Preliminary analysis of the solution and estimation of effort                        | ■         | ■       | ■        | ■        |         |
| Information session on the work for each programme with the different committees     |           |         | ■        |          |         |
| Presentation to the university's different committees                                |           |         | ■        |          |         |
| Working session with the committees on the backlog for each programme                |           |         | ■        |          |         |
| Initiatives ready for presentation to the ICTMC                                      |           |         | ■        |          |         |
| Working session with the committees to close the 2020 project portfolio              |           |         |          | ■        | ■       |
| Presentation to the ICTMC of the 2020 portfolio agreed with the programme committees |           |         |          |          | ■       |
| Presentation of the 2020 ICT Action Plan to the organization                         |           |         |          |          | ■       |

**Figure 3:** Timeline of the Portfolio Management phase

Currently, we are starting a new phase, consisting of an **Agile Pilot Program**, setting new procedures, artefacts, and roles all over the software development cycle.

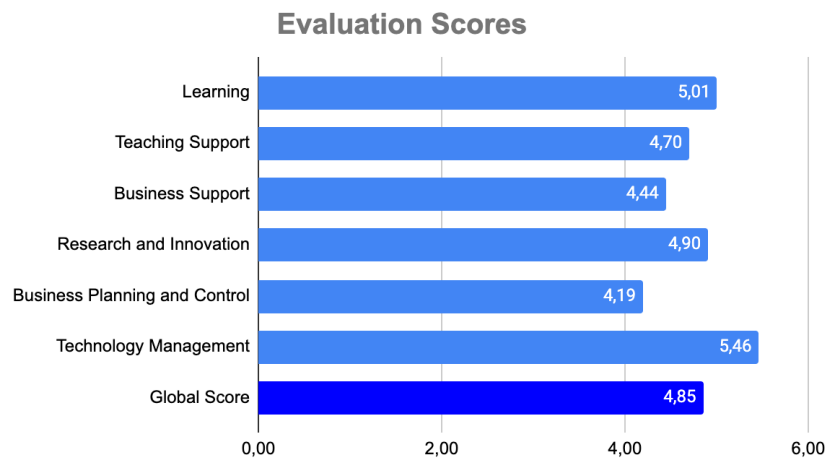
### 3 Assessment and results

To better understand and evaluate the results of the implementations of the first phase of the new program management and make further improvements, we launched a survey among sponsors and business owners of the programs.

The survey asks for a quantitative evaluation of three different aspects:

- An evaluation of the information received and the management of change.
- An evaluation of the work process followed.
- An evaluation of the results obtained.

As well as these quantitative evaluations, the respondents were also asked to give a global qualitative evaluation, mentioning all those aspects that they considered most important.



**Figure 4:** Evaluation Scores

**The implementation of the new Portfolio Management Process was given a global evaluation of 4,90 out of 6.** The highest scores were given for the Technology Management program (5,49) and for the Business Development, Marketing, and Institutional Relations program (5,38). The lowest scores were given for the Research and Innovation program (4,54), and the Business Support program (4,64).

The average evaluation by section is as follows:

- Information received and management of the change: 4,83 out of 6.
- Work process: 4,98 out of 6.
- Results: 4,86 out of 6.

On the other hand, most of the qualitative evaluations received consider that the new Portfolio Management Process represents a significant improvement over the previous process, highlighting transparency as the main characteristic. In terms of areas for improvement, two aspects received the most mentions:

- The allocated budget only makes it possible to tackle a small part of the needs. This reduces the usefulness of the new prioritization process, as in the end only urgent needs are prioritized.
- Segmentation into programs makes it difficult to lead and monitor cross-cutting initiatives, as these are located in a single program, even though they also impact business processes located in other programs.

Finally, five key success factors of the model implemented are showed:

- **Achieve the shift from a customer-supplier model to a co-responsibility model:** the new model places a much more important emphasis on co-leadership and co-responsibility in the achievement of objectives by Management and Academic Management.
- **Align the agile procurement framework with public procurement legislation:** Once developed, it will have to be applied to the provision of software development services, which will involve new tendering processes.
- **Give the program committees a cross-cutting perspective:** the number of program committee members must be limited in order for them to be operational. The members must work with a global perspective and not simply to defend the interests of a specific area of activity.
- **Empower Technology roles:** the model involves co-management of the different programs with Management and Academic Management. The role of Technology on the committee in contributing to the prioritization and joint planning of activities must be acknowledged and respected.
- **Develop a training and support plan:** the new model involves a change in the way projects are executed. The teams must be given training and support for applying agile processes in Management, Academic Management and Technology.

## 4 Conclusions and next steps

Remembering the three key factors which explain the need of this new strategic and operational model – the time between the detection of a need and the deployment of the solution is too high; the current development model, based on closed projects, makes it hard to include modifications during the project cycle; and Management and Academic Management will not participate on a continuous and stable basis in the needs prioritization process or in all the project phases - our conclusions are as follows.

First, we expect a **quicker release of products**, as we reduced procurement time: the new operational model is accompanied by a new agile procurement model that should make it easier for orders within the same area to be directly executable, minimizing the processing time. And we want to reduce development and change management time, so the products are created using an incremental build model, adding or improving components on an already operational initial version. Value creation and change management take place sooner.

On the other hand, **we increased flexibility** in different phases of the life cycle, with **flexible execution** - the products are developed in short cycles (normally one month), after which it is possible to evaluate the product and define the priorities to be worked on during the next cycle, and the product is continuously aligned with needs - **budget flexibility** - the programme committees have freedom to prioritize actions within the budgetary framework allocated to each programme, thus ensuring that the capacity in place is used for whatever provides most value at each time – and **contractual flexibility** - the new agile procurement model should make it easier to purchase development services with an open scope of application, making it possible to modify the priorities worked on in each cycle.

Finally, we made possible the **participation of Management and Academic Management in the entire project life cycle**, with cross-departmental teams - Management and Academic Management help to identify needs and to prioritize and develop them, participating through programme teams – and continuous participation and co-responsibility: the participation of Management and Academic Management throughout the project life cycle allows continuous management of expectations and aids communication between the stakeholders involved.

## 5 References

Cleland, D. (1999). “The Strategic Context of Projects” . In Dye, L. and Pennypacker (eds.) *Project Portfolio Management. Selecting and Prioritizing Projects for Competitive Advantage*. Center of Business Practices.

Leybourn, E. (2013). *Directing The Agile Organisation: A lean approach to business management*. IT Governance Ltd.

Narayan, S. (2015). *Agile IT organization design: For digital transformation and continuous delivery*. Addison-Wesley Professional.

Peppard, J., & Ward, J. (2016). *The strategic management of information systems: Building a digital strategy*. John Wiley & Sons.

Rodríguez J-R., Clarissó, R & Marco-Simó, J-M. (2019) “Towards a Framework for Assessing IT Strategy Execution”. *Computers*, 2019, 8, 69

SAFe (2021). Welcome to Scaled Agile Framework®. Updated in February 10<sup>th</sup>, 2021. Retrieved in January, 15<sup>th</sup>, 2022.

Thiry, M. (2010). *Program Management*. Gower.

Wysocki, R. K. (2011). *Effective project management: traditional, agile, extreme*. John Wiley & Sons.

Weill, P. & Ross, J. (2004). *IT Governance. How Top Performers Manage IT Decisions Rights for Superior Results*. Harvard Business School Press.