

A Work Project presented as part of the requirements for the Award of a Master's
Degree in Finance from NOVA School of Business and Economics

Organisational Structures for Cloud

From the Business Project: Cloud Solutions for Telecom

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Based on the Business Project developed at CEMS – MIM partner school Ivey School

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21st of April 2014

Abstract

Telecom companies face increasing competition and decrease in profitability. Cloud computing is one of the best markets to reverse this trend. Creating a new cloud product is however a challenge from both a product development point of view and an organisational point of view. A new cloud product focused on development through partnerships needs the appropriate organisational mechanisms to succeed. In an initial proposal a Partner Management Office was proposed. However the lack of integration between the office and the rest of the company suggested that the use of a matrix organisational structure would be a better fit. I propose a balanced matrix structure to address the duality of dimensions within the product and elaborate on how this structure should be implemented.

Keywords: Cloud, organisational structure, dimension duality, matrix structure

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1. Introduction

This Work Project will aim at developing the subject of organisational structures in cloud computing. The proposed structures respond to the specifics of cloud computing projects and provide a model that will help to solve the organisational challenges that such projects bring.

The report is structured as follows. The first section will provide an overview of the business project; the second section will develop the topic of organisational structures for cloud computing within the context of the business project; the third section will reflect on the key learnings of the business project within the literature and personal experiences and insights from participating in the project.

2. Business Project Overview

The business project was requested by a telecom company hereby referred as Acom. Acom is an international company with a strong presence in their home market and minor operations in some foreign markets. The main products that Acom distributes are the traditional business of a telecom company: mobile phone subscriptions, internet subscriptions and fixed land-lines. In recent years, however, Acom entered a fourth market, Digital TV.

Despite the diversity in the product portfolio and the relatively large customer base and market share in their home market, Acom is facing several challenges similar to the challenges faced by telecoms worldwide. The traditional services are under increasingly higher competition which is putting pressure on the operating margins. As competition increases and companies are forced to lower their prices, growth stales. Thus, Acom needs to find new opportunities if it is to survive.

Within this context, Acom decided to enter a new product market – cloud computing – since it believed to be the ideal product that combined with their current offer could send the company for further growth. However, the market of cloud computing is already filled with many small and large players with significant variety of products. More so, some of the players are giant multinational companies with scale and resources that Acom cannot compete with. As such, Acom needs to find the best way to enter the market, considering the competitive landscape, their assets, customer base and the fact that they are late entrants.

With this challenge, Acom contacted the business project team in order to help develop that new product that would answer to their needs. Moreover, the team would

help Acom understand how to position the product in such a way that it monetises the better part of the value added to the customer by the cloud.

The first step of the project was to create a scoping document that would allow the team to focus resources and establish a timeline of development. In the scoping document the project was restricted to a cloud product for residential customers only. The business project would focus on the development of the new cloud product for residential customers, hereby named Acloud. The project took place in three phases: first there would be a background research; secondly the development of the product and business model; third the implementation plan.

The background research was done on the current cloud offerings for all markets, with a heavier focus on cloud products for residential customers. Moreover insights about the consumers of cloud services were drawn. This background research would yield data to provide a competitive landscape and a benchmark for Acloud. There were several important conclusions from this research. First, the main competitors of Acloud will be large multinationals that have an already established position gained with a simple cloud product – an example of this would be *Dropbox*. Second, there is no established business model for cloud computing since it is still a very young and experimental market. Third, there is potential for pricing cloud services as long as they have the right selling proposition – namely data security.

During the second phase of the business project the team created several ideas for Acloud based on a practical approach. From this process one main conclusion was drawn. In order to provide the best value, Acloud must become a platform that connects both demand side for cloud services – coming from the customers – and supply side of cloud services provided by partner companies. Acom would be able to leverage its customer base as a selling point to its partners.

Finally the team created an implementation plan. The implementation plan was created so that Acom would have a detailed strategy to launch the product. One of the main conclusions of the implementation was that the proposed Acloud product was a heavily complex product that would not be well received in the beginning. As such, the implementation took this into consideration by streamlining the features of Acloud into the simpler ones that would mimic already existing products and more complex ones that would elevate Acloud above its competitors. With this strategy, the launch would be more effective, faster and less costly, while also providing options to change the product based on new insights or developments in the market.

3. Organisational Structures and Implications

3.1 Business Project Approach

When developing the product of Acloud the team recognised that the proposed product had some organisational implications for Acom. Since the core of the product would be dependent on partnerships with companies that would use Acloud as a platform, there was need for the creation of organisational structures within Acom that would deal with these partnerships. The main purpose of these structures was to ensure; strategic alignment between the partnerships; confidentiality of the data managed; branding cooperation and cohesion; technical assistance. The proposed structure was named Partner Management Office (PMO) (Appendix A).

The PMO would be the central point of coordination of the Acloud product with all the other offerings of Acom. The PMO would further separate into two sub-offices. On the one hand there would be the Technical & Technology Office (TTO) that would focus on the technical issues and development of Acloud with partners. On the other hand there would be an Alliance Management Office (AMO) that would be dedicated to the strategy, and branding of the partnerships. In addition, there would be a data management department within the AMO due to the sensitivity and amount of cloud data that Acom would have to process.

While the establishment of a PMO with the subsequent offices would provide valuable for Acom due to the current lack of tacit knowledge of how to deal with partners in the joint development and marketing sphere, it did not fit completely into the organisational picture of the company. Even though Acloud was a new product independent from the current business units of Acom, it was essential that the offices created to manage Acloud were capable of addressing the partnership dependency while also fitting within the overall Acloud organisation.

Before being a project with joint-developments, Acloud is a product offered by Acom alone. In fact, the base product that would serve as platform for the development of Acloud applications through partnerships will be developed and managed solely by Acom. Thus, the basis of the organisational structure should be incorporation of the product into the main organisational grid. Afterwards the dimension of partnership should be taken into consideration, and the proper structures to ensure partner stability and to facilitate Acom organisational learning should be put in place. In all cases these should be somehow subordinated to the main hierarchy.

3.2 *New Approach – Matrix*

In order to design a new organisational structure that provides additional added value when compared to the previous idea, it is first necessary to go back to the problem. By analysing the main challenges of the structure of the new product, the proposal can better address the issue at hand. The main question of Acloud is that it has two different dimensions that need to be taken into account: an internal dimension from Acom and an external dimension from the partnerships to be established. Moreover, an additional factor that these two dimensions are connected adds more complexity.

Within the internal dimension there is the issue of coordination between various departments of the company with the new product. The main challenge is to fit Acloud with the current sales & marketing, research & development, finance and additional departments that Acom might have. A new team will have to be assembled in each department to manage Acloud from a company centric point of view.

In the case of the external dimension there needs to be coordination with the partnerships to be established. When sealing the alliances Acom must ensure that there is strategic alignment, that the sales & marketing of the partners is consistent with that of Acom, and that there is technical support for the partners. The initial proposal of the PMO was mostly focused in covering this dimension.

Finally, it is important to note that these two dimensions are connected and without proper communication within, the organisational structure will not be successful. As such, besides the mechanisms to ensure the best interests from both points of view, the organisational structure must be such that there is a degree of interdependency between the two sides. Only then Acom will be able to deliver a product that is consistent internally, externally with the partners, and altogether as an integrated new product in a new market.

The main challenge is therefore to solve this double entry dimension of the structure. On the one hand Acom must have a vertical hierarchy of the new product by incorporating it into the already existing structure. On the other hand, the new product has a different set of specificities, namely the dependency on partnerships that will require a horizontal dimension to the structure. This horizontal dimension, however, must be implemented so that there are no conflicts within the already existing structure. Moreover, the horizontal needs also to be a source of communication so that these two are connected.

Having established that there is a problem of double entry of responsibility in the product, the best organisational structure to create in order to coordinate this problem is one that has this double entry possibility – a matrix structure. With a matrix there is the possibility of introducing multiple entries horizontally while keeping the overall vertical hierarchy of Acom's structure. As such, creating a matrix would allow Acloud to be placed within the overall hierarchy while not ignoring the partnerships and alliances that will be the centre of added value for the product.

A matrix structure has some advantages when compared to the traditional hierarchies of companies. The first main advantage of a matrix is that it facilitates information flow since there is a much stronger connection between all areas. Shared responsibility promotes communication, and if correctly leveraged this structure can be more valuable. In addition, a matrix structure also enhances the efficiency of resources. Allocation of expertise and human capital across teams reduces the need for duplicate knowledge pools. Finally a matrix structure provides flexibility to the organisation. If Acom would adapt a matrix organisation the strategic flexibility of the partnerships would be higher. Acom would be able to expand or retract the horizontal dimension depending on how significant the partnership would be. (Larson & Gobeli, 1987)

The main advantage however of a matrix structure is the fact that it has a positive impact on performance if well applied. In an engineering setting, similar to that of Acom, some implementation difficulties were not enough to deter the performance improvement of project delivery. (Kuprenas, 2003)

However matrix structures also have some shortcomings that have to be considered. From a resource point of view, while sharing knowledge and the resource pool can increase efficiency, it can also foster conflict within the organisation (Reference for Business, 2014). The competition for resources, either financial or tacit knowledge, can lead to struggles that damage the information flow. Furthermore, matrix structures are often stage for power struggles between the dimensions of the matrix. It is often unclear where the power within the structure resides in traditional hierarchic structures. Thus, if we define the non-hierarchic power dynamics as heterarchy (Williams & Lee, 2011) a matrix is closer to a heterarchic structure where political heterarchy is more important to success. Moreover matrix structures, while flexible, have a slower reaction time (Larson & Gobeli, 1987). Considering that in a matrix there are two different dimensions, there is always dual reporting issues. These combined with the fact that teams share knowledge create an environment focused heavily on consulting and shared decision

making that often culminates in delayed responses (Larson & Gobeli, 1987). One other drawback for matrix structures is responsibility ambiguity. With two lines of responsibility senior management frequently finds difficulties in assessing who is responsible for certain team actions. As a final note, matrixes are also more costly due to the multiplied channels of communication and the need for extra human resources to coordinate the different dimensions (Kuprenas, 2003).

Adjacent to the many arguments in favour and against matrixes in organisations, there are also different types of matrix structures that put different levels of responsibility on the horizontal (or project) managers (Larson & Gobeli, 1987). The lowest level of horizontal power is a purely vertical structure or functional organisation. As a horizontal role is introduced, the power can range from simply overseeing the project without any decision making power, to having some operational power, to having full control of the project (Larson & Gobeli, 1987). Having identified the need for a matrix, the next question is drawing the matrix structure and choosing the right level of power within the horizontal dimension.

Looking at the complexity of Acloud the two dimensions would be the vertical separation per type of function and a horizontal separation per partnership or alliance. The existing structures of sales & marketing, technology, research & development would each have a team assigned to work on these divisions for Acloud. For the horizontal dimension there would be for example, within the team of sales & marketing of Acloud, people dedicated to partnerships and to the internal offering of Acloud developed by Acom. The overview of the matrix structure is shown in Appendix B.

The internal dimension of Acloud would then be assured by the internal structure. The main departments of Acom would maintain their main structure and there would be the introduction of a new team in each department dedicated to Acloud. These teams would report to the team manager that would have the responsibility of the team in the specific department. These managers then would be part of the group of department managers that would report directly to the vice-president (VP) of their respective department. Shortly put a simple vertical structure similar to the one already in place for other products of Acom.

Externally the horizontal dimension would be maintained by allocating people for the vertical teams into the partnerships. With this structure, within the sales team there would be someone for the Acloud sales team dedicated to the sales made through partnership with partner A, someone for partner B and so on. Most of the team would be

allocated to the sales made through the internal products of Acom. Since the allocation of people to the partnerships would be done horizontally through all the vertical departments there would be an ensemble of people that would be the team for one specific partner. This way each partner would have a dedicated team that would ensure strategic alignment, effectiveness of sales, consistent marketing, appropriate financing and technical support for development and maintenance.

Implementing this structure would still imply some organisational changes to the main vertical structure to accommodate the new horizontal dimension. Partnership management would be one of the key success factors for Acloud as such the establishment of a department dedicated solely for these partnerships would be crucial. As aforementioned, each partner would have a dedicated team that would oversee the success of the partnership. For this team there would be the need for a contact person that would be the main bridge between Acom and the partner – an alliance manager. Considering further that most partnerships would require an alliance manager, the ensemble of alliance managers would then need to belong to a new independent vertical structure that would report to senior manager – alliance management office – with a VP for alliances.

Having the overall structure designed the question of how much horizontal power the teams dedicated to partnerships will have. Compared to the examples of project management matrix challenges, the alliance manager will have similar roles. In order to avoid giving too much power to either dimension, the most appropriate power dynamic would be a balanced matrix (Larson & Gobeli, 1987). With a balanced matrix the alliance managers would interact on an equal basis with the department manager for Acloud. Practically, an alliance manager would have the same hierarchic power than a sales manager for Acloud. This power dynamic would ensure that both dimensions are respected during the decisions. Furthermore, both managers would report to a VP (alliance VP or sales VP) that would have direct contact to the senior management.

The main implication of this approach for Acom is that there will be need for new vertical structure – the alliance management office. This new vertical structure will subsequently need its own staff and a new VP position. In reality, the new product of Acloud will require Acom to make an organisational expansion far superior to the normal project management expansion. A new organisational expansion means that the investment in human resources and the possible implementation issues will be a costs to

be considered when developing the new product and evaluating the economic value added by it.

The balanced matrix approach for Acloud, however, solves the major issue that was identified – the problem of dual dimensions. By having a matrix structure Acom can guarantee the vertical alignment with the product offering already in place while also supporting the main source of value for Acloud – partnerships. In addition there are other sources of value for the company such as fostering organisational learning. Considering that organisational learning is a function of time and structures (Zahra & Garvis, 2000), by having a department solely dedicated to alliances Acom will possible extend these alliances to other products and platforms beyond Acloud. The department can be even more value creating if these partners are potential clients of Acom.

Developing this structure does not come without risks. As mentioned, one of the major downsides of matrixes is the added cost since the investment in human resources and reporting structures is higher than traditional hierarchic structures. The proposed structure for Acom adds a complete new department and a new role that will have to be filled according to the number of partners in Acloud. Therefore the investment in the product will also require the investment in human resources. Since Telecom companies have cost structures mostly driven by fixed costs and this structure can be seen as a quasi-fixed cost, the resulting cost structure for Acom will have even higher emphasis on fixed costs. The result is that the launch of Acloud will have additional pressure since the margins will be lower by default. In an initial launching phase with little capacity to increase price due to penetration pricing, the need for volume will drive most of the sales processes.

Concluding, the PMO proposed in the business project was not the best structure available. In the presented form it did not respond to the problem of two distinct dimensions within Acloud. The best way to solve this dual dimension is to implement a matrix structure that incorporates these two dimensions. Similar to a project management perspective, Acom will have vertical teams and horizontal teams dedicated to one specific partnership. In order to coordinate and create a cohesive structure, alliance managers should be appointed for each partnership and report to a new dedicated department of alliance management with direct connection to the senior management. This approach strongly emphasises the need for companies to engage in partnerships, facilitating its management and creating the appropriate structures to benefit the most from this investment in organisational structure.

4. Personal Reflections and Learnings

The business project was doubtlessly a challenge that required the application of hard skills learned throughout the Master's, hard skills previously unknown and soft skills. Since the main area of the project was outside the scope of finance, most of the finance related hard skills were not necessary during the business project. However, several other courses contributed to the unfolding of the business project challenge.

As a consulting project, the challenge for Acom required an understanding of the global strategy of a company and the basics of strategic decisions. While not directly used the frameworks from strategy courses were crucial for the contextualisation of the Acloud product and Acom in the competitive landscape. Five forces of Michael Porter (Porter, 2008) were used as a backdrop to which the competitive environment for Acom was analysed. In addition the dynamics of competition and the market size were also considered to determine the industry attractiveness, following the structure presented in Appendix C (Costa, 2013).

From that point onwards the same framework was instinctively used to propose a strategy that would give Acom a competitive advantage in the market of cloud computing using Acloud. This structured strategic thinking helped to define what were the main ways to create value for Acom.

In addition to the strategic frameworks the business project also introduced some knowledge about topics such as project management and marketing. While marketing tools and frameworks were used mostly for the purpose of the client, project management knowledge was both useful for the client, since it was part of the main conclusions, and needed for the management of the business project itself.

In terms of project management the main ideas incorporated were those of gating and dependencies. Within the business project itself some of these concepts were used. The fact that the project was divided into three stages meant that the work required for each phase was different. Mostly, the project needed an initial background research about Acom, the competitive environment and customer insights. Without this background information the project could not go through. From the second phase onwards, the exposing of the main idea for Acloud was also a needed stepping stone before the actual implementation plan. As such, the natural planning of the business project engaged in project management practices. Moreover, the idea of gating was also introduced during the management of the business project since at some point, at the critical phase, there

was a scrutiny to understand whether the research had been sufficient. At that point, the team went back to revise the research since it was insufficient to proceed.

For the client, project management ideas also were significant since the implementation plan also applied the notion of dependencies. Some features of the product were dependent on the success of previous features. In this case, there was further introduction of concepts such as milestones that Acom should track before proceeding along with the proposed implementation plan.

Beyond the concepts of project management, the business project demanded some knowledge about customer insights and marketing. Again, no particular framework was used. In customer insights, the team used the idea of customer statement – a statement written for the perspective of the customer with the key details of what he desires and values. For marketing of Acloud, there was the definition of key selling points and the creation of advertisements focused in communicating that particular selling proposition. Moreover the idea of simple strong messages for communicating the features of the product was used, tying with the previous background research of the customers so that the message matches the audience. Finally, for the selling on the store, the concept script for sales personnel was introduced to improve communication for the product.

When considering soft skills the business project was also demanding. Considering that the team was half Chinese, there were significant cultural clashes between the European working style and the Chinese. In communication alone, there were divides since frontal communication is frowned upon in China whereas in Europe is mostly preferred. As such, the initial moments of the project were marked by significant weakness from both sides in getting the message across. On that remark, my personal contribution was mostly into understanding the Chinese culture and way of working rather than forcing a specific working schedule. However, my ability to get the team into the same page was weakened by the hostility of my Asian counterparts. Thus, my capacity to work under pressure on not so familiar topics overcame my incapability of bringing the team into harmony.

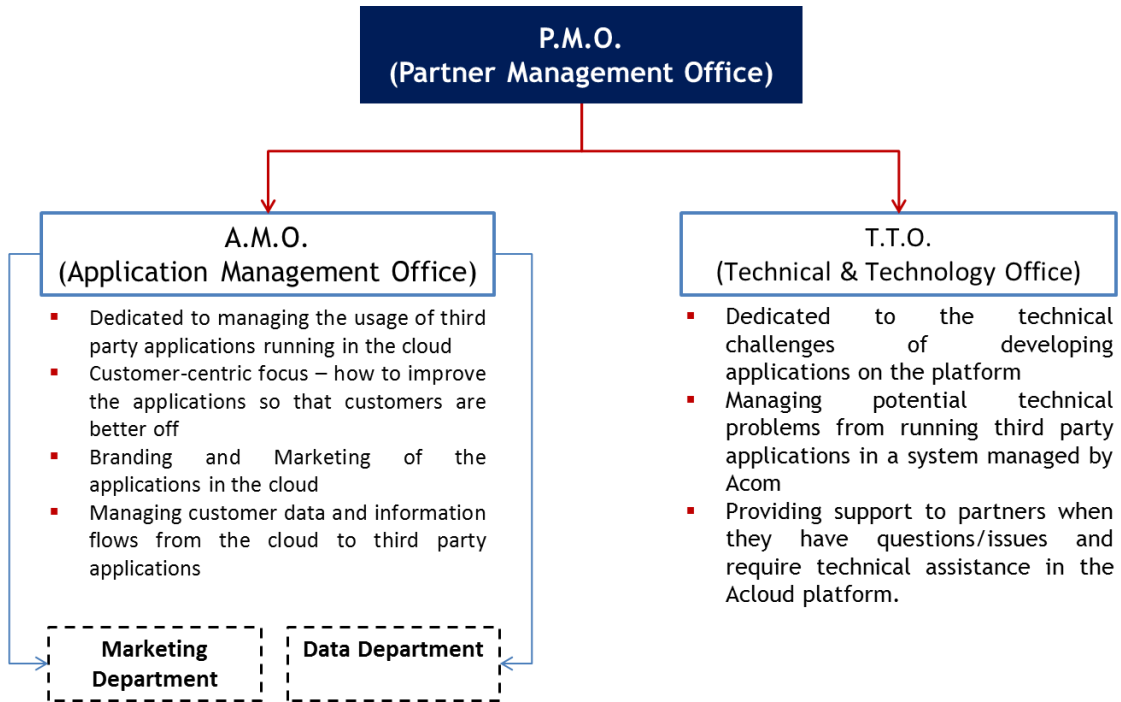
Despite the difficulties the team delivered a final report and a presentation that added significant value to Acom. The proposal for Acloud was solid, had a clear mission and a strong value proposition. Still, besides the incapacity to have a cohesive team, having had an even less academic approach would have added further value to the client. The product was in early developing stage and at that point the Acom would benefit the most with very concrete ideas in the cloud computing environment.

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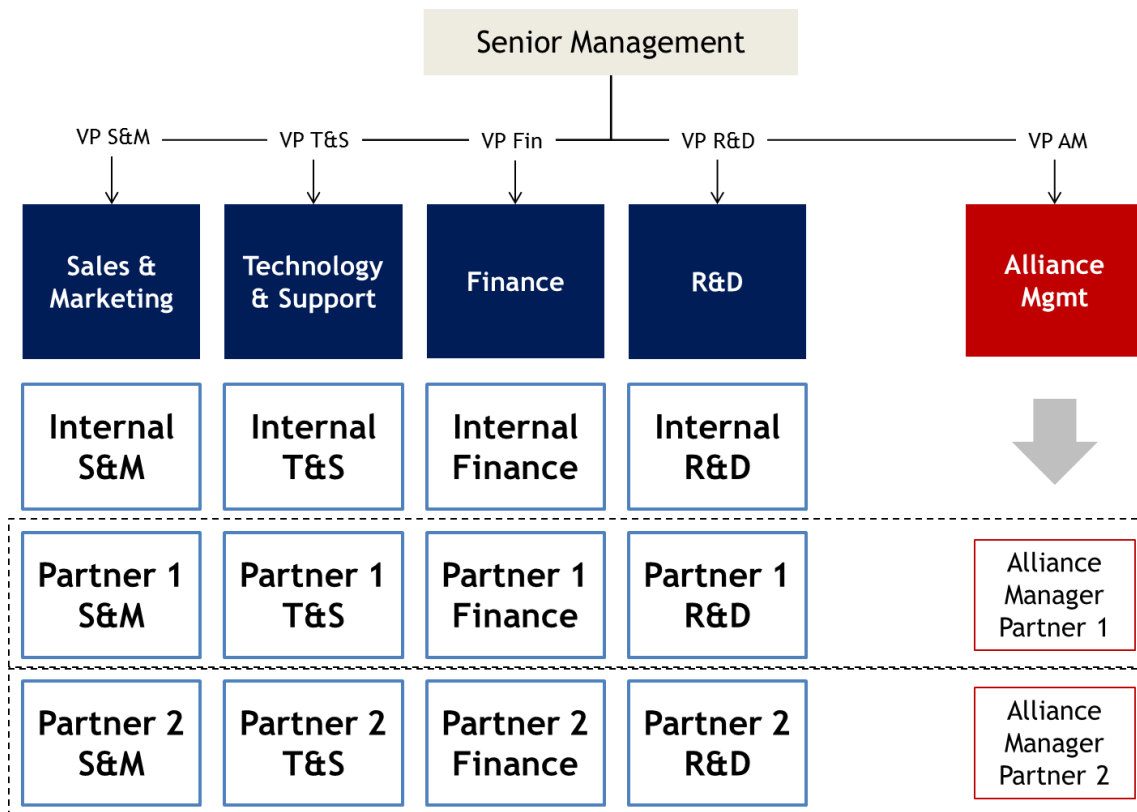
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Appendices

Appendix A: The business project approach - proposed organisational structure for partnerships



Appendix B: Proposed Matrix for Acom’s organisational structure



Appendix C: Strategy and Value Creation framework (Costa, 2013)

