

Laying the foundations for Innovation

How architectural principles help to shape an innovation friendly environment

- Linda Kuiper, Jeroen Cloo -

Well considered business architecture can support an organization in becoming a place where Innovation thrives. Organizations will need to promote an environment of interaction to facilitate cross-pollination and the free flow of information. This supports the promotion of creativity and the development of ideas when seeking to exploit the full potential of innovative powers.

Covering the basics

Throughout this article the terms Innovation and Architecture will appear as key notions in our discussion. We will use the definition of De Bono (Lateral thinking, 1977) to describe what is meant by the word innovation. According to De Bono, innovation is “implementing a creative idea (and in doing so, adding value)”. In our article we will be focussing on innovation in the context of an organization, therefore added value could mean it generates revenue, saves time, or otherwise proves to be an improvement.

The definition of innovation mentions creative ideas. Without creativity, there can be no innovation. Because creativity is so important we should add it to our discussion. Creativity involves the conception of new ideas, or finding new connections between existing ideas. To refer to De Bono once more, creativity is seeing patterns that weren't noticed before, or bridging gaps that were deemed impossible to span. It is all about making new connections, crossovers and letting go of rigid structures. Creativity is by no means a solitary exercise.

The creative process is well documented and studied. It actually requires hard work. Roughly speaking, the creative process could be divided into five phases, starting with gathering information from a wide variety of sources, which may even include recycling old and discarded ideas. This is quite often interchanged with digesting the input and “sleeping on it”. At some point the first raw idea is conceived. This will need to be discussed, debated and scrutinized. If it proves to be viable, usually after considerable adjustments are made to it, the last steps are to be taken. Before the idea becomes reality, often natural resistance to something unknown has to be overcome. Then it can finally be called an innovation. (A.Hargadon and R.I. Sutton, Building an Innovation Factory, Harvard Business Review, May-June 2000). Essential conditions for most stages of the creativity process point towards full access to information and the opportunity to freely interact with others. As we will see, both may sometimes be two sides of the same coin. They are closely related.

At the risk of grossly oversimplifying matters here, one could say that, within the context of an organization, innovation can apply either to processes, products and services, or customer contacts. Organizations may choose to use different tactics in each of these areas, even combining contradictory approaches simultaneously. For instance, an organization may participate in a consortium in the field of product innovation, like Philips and Douwe Egberts did when developing the Senseo coffee maker. Still, Philips still has its own R&D divisions, where product innovation is taking place, shielded from the outside world.

Speaking of the innovations themselves, one could roughly distinguish between the innovations that stay within an existing context and the ones that actually change the context itself. For instance, when Pepsi started to sell their drinks in plastic bottles, instead of glass ones, the innovation impacted the way their product was packaged, while it still stayed within the context of distributing the product in bottles. An example of changing the context itself is found in the way Rem Koolhaas approached an assignment by Prada. He didn't just design a fashion store. Instead he saw “supply pipes” for fashion. Based on an

analysis of existing shopping patterns, he came up with a visual vocabulary, leading to a design for the Prada website and advertisements, a strategic plan for managing real estate, and a series of modular shop interiors. Koolhaas has adopted analyses and forecasts as the tools of his trade, instead of focussing merely on the way a building is shaped. (Goos Geursen, Als de leuning beweegt, 2006)

In this article we will call on the definition of architecture as coined by the IEEE: Architecture is the fundamental organization of a system embodied in its components, their relationships to each other, and to the environment, and the principles guiding its design and evolution" (IEEE STD 1471-2000). The word system should be understood to refer to any type of system. It may be applied to an enterprise or some other form of organization. We will be primarily concerned with systems in the sense of businesses, thus focussing on Business Architecture.

When designing a structure that enables an organization to accomplish its goals, the basic guidelines are captured in 'principles'. For example, principles record company policies and standards, or even values that a business wants to ratify. TOGAF defines principles as "general rules and guidelines, intended to be enduring and seldom amended, that inform and support the way in which an organization sets about fulfilling its mission"(TOGAF). One could see principles as high level requirements that will support the decision process when designing an architecture.

Fundamental principles

While innovation doesn't come easily it may knock on the door at any moment, provided the environment is innovation-friendly. Using the metaphor of an idea being similar to a living entity that has to fend for itself and has to grow, allows us to regard the organization as an environment for ideas. What would such an innovation-friendly environment look like, if we try to shape it using architectural principles?

Five o'clock, Friday afternoon. At some companies employees are already on their way out hoping to beat the traffic. At others it is the start of the office get-together. Such small gatherings might not seem important at first sight, but, as a 2007 study by the ING bank shows, those companies that do throw parties regularly see a significant increase in creativity which is a prerequisite for innovation. This only has an effect provided it truly is an informal occasion and is not perceived as "work" in any sense (ING bank, economic department, February 2007, at FZ.nl). According to this study, involving some 1700 "small and mediums sized" companies, such a get-together is one of the best approaches for establishing more trusting relationships amongst employees. People have the opportunity to mingle and get to know each other. This helps to alleviate the effects of specialization and separation of business units that keep the organization manageable, but at the same time hamper communication. Internal competition adds to this problem, since it encourages divisions to hoard rather than share their information. Information in relation to innovation is not restricted to certain kinds. It ranges from old ideas to new reports by a trend watcher, it may be lessons learned, or it may even consist of conclusions drawn from apparently uncorrelated and "raw" data.. Its possible sources are equally unlimited. Free access to information is crucial in order to get new ideas. And ideas being shared are like a hotbed for innovation. People tend to feel safer once they get to know each other outside of a purely professional context. Not surprisingly, this turns out to be the key factor in sharing information. Bringing people together, instead of separating them, turns out interactions to share information. This is not only a vital condition for providing the fuel for new ideas, it to be essential, as well as building trust. As a rule, an innovation-friendly environment encourages open is also imperative at the later stage, where they are to be examined and compared with rivalling ideas to see which ones are the best.

Principles for an innovation-friendly environment

- ④ *encourage mingling of people outside a day-today context*
- ④ *secure the input for new ideas – even ideas from outside your own context*
- ④ *use a minimum of controls in favour of guidelines*
- ④ *diversity is a must, combining strengths*
- ④ *embed innovation at the highest level of management*

Principle: encourage mingling of people outside a day-today context

As described, gathering information is vitally important, and information may come from any source. An additional tool in getting this valuable information is proposed by Hargadon and Sutton who advocate the involvement of knowledge brokers. These knowledge brokers use old ideas from one industry as the base material for new ideas in another field. They are intermediaries, bridging the gap between separate areas of expertise. They support organizations in finding new utilizations for information existing within its walls. In general, their added value consists of preventing a lot of time and effort being spent on ideas that already exist outside the immediate field of vision of one group. An organization can either hire the services of knowledge brokers, in which case they function much like external consultants, or they could have some of their own employees fulfilling this role. (A.Hargadon and R.I. Sutton, Building an Innovation Factory, Harvard Business Review, May-June 2000)

Principle: secure the input for new ideas – even ideas from outside your own context

The same ING study cited earlier states that ninety percent of employees find that abolishing unnecessary rules will stimulate their creativity. The same study shows however, that, seventy percent of the companies value their rules and regulations. (ING bank, economic department, February 2007, at FZ.nl). Mauzy and Harriman (Creativity, Inc., 2003) elaborate on the subject of rules, making a distinction between controls and guidelines. “Corporate controls are given and received as either commands (which, in motivation terms, will at best function as extrinsic motivators) or as guidelines (which promote intrinsic motivation). Command control ... also blocks individuals and their ideas from reaching one another and stimulating creativity among the greatest number of people... When a company offers flexible guidelines, leaving the interpretation of the guidelines to employees, it honors and stimulates employee intelligence, judgement, and creativity.” In general, one could say that management needs to carefully consider the effect its management style has on facilitating and stimulating creativity.

Principle: use a minimum of controls in favour of guidelines

Housing cooperation “Het Oosten” in Amsterdam is a living example of an organization that has declared innovation to be one of its core activities and recognizes it is essential for its survival. One method it has adopted is to encourage everyone in the organization to get actively involved in project groups that are engaged in innovations. Het Oosten understands that connecting different disciplines (such as technical, marketing and legal) and cultivating knowledge crossovers is essential when trying to stimulate innovation. (Koen Eising, www.ManagementSite.nl, 2007) In combining different people from various areas of expertise, or bringing together people who hold opposite views, innovation is stimulated. Het Oosten is not the only company that uses this approach. Other enterprises, like the multinational Shell, actively encourage policies on diversity and inclusiveness, crossing boundaries in the most literal sense of the word. A focus on diversity is also emphasized by top trainer Marc Lammers, who sees clear parallels between sport and business. He states that focussing on the individual strengths of each player will stimulate them to excel at their individual talents for certain elements of the game. It takes a diverse team to form a winning team. This observation is applicable to several levels - individuals, departments or branches alike.

Principle: diversity is a must, combining strengths

Another powerful measure taken by Het Oosten consists of appointing a member in the board of directors who is made responsible for defending the cause of innovation - the Innovation Director. At Lost Boys, a successful and highly innovative company for digital marketing and technology, we see a similar approach. Lost Boys appointed a Strategy Director, whose main expertise lies with developing strategies and innovations. From these examples we could distil another principle.

Principle: embed innovation at the highest level of management

It's a start...

This is all very well, but is it enough? Will an increase in the number of office parties suddenly make an organization innovation-friendly? Clearly simply adopting the principles stated above will not make the difference if they are implemented without an understanding of the underlying psychological drivers. For instance, if the KPIs still endorse employees to look after their own interests, office parties will be hard-pressed to have a positive effect. A study by Greer (Leiden, 2007) shows that employees who do not feel they are equals and do not share a common goal, will not communicate and share information.

The principles we have defined here are by no means comprehensive. They are merely a collection of the most striking measures taken from daily practice, implemented in existing organizations, with the intention to show how architecture may contribute in laying the foundations for innovation.

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