

Chapter 2

The Practice Areas

The remainder of this book describes the practice areas and their usage experiences in industry. The practice areas provide software companies with structure to use to organize innovation. The practice areas are not written from an engineering perspective. They are orthogonal to the typical software engineering disciplines such as requirements management, architecture, testing . . .

The practice areas were distilled by observing how software companies innovate. Practice areas fulfil the following criteria:

- *Relevance*: They represent a common pattern that occurs in several software companies.
- *Innovation-related*: They represent a challenge or opportunities related to innovation, not just engineering.
- *Transferable*: They allow the identification of a set of key activities that can be mastered by companies and be communicated.

Based on the above criteria, eight practice areas have been identified. An overview is provided in Fig. 2.1.

In the remaining section, the practice areas are introduced briefly and motivated. At the end of this chapter, the structure of the practice areas is introduced.

2.1 The Practice Areas at a Glance

2.1.1 The Art of Focusing

The problem of your software company may not be a low volume of ideas. It is probable that many team members and customers produce plenty of ideas in your organization. Generating, collecting and processing these ideas can consume a large amount of energy.



Fig. 2.1 Eight practice areas for software innovation

The perceived malleability of software (Sect. 1.6.1) and the large innovation potential put many software companies in a situation in which there are too many ideas to pursue.

Your company may have specific innovation targets it wants to achieve. These targets are most probably not explicit and are difficult to communicate. Suppose you could steer your available creative resource in such a way that it produced ideas within the scope of these targets.

Software companies that are able to funnel the ideation process in a specified, well-defined direction have a competitive advantage over more reactive companies that shoot in all directions. Knowing what to pursue – but most of all what not pursue – is a necessary skill that software companies need to master.

This practice area is about defining (measurable) innovation targets and goals, thereby allowing funnelling of ideas in well-defined and intended directions.

2.1.2 The Art of Idea Harvesting

How do you collect ideas for your next software release? Where do your ideas originate? Who identifies and follows up ideas? Where do you store ideas and input for your product?

Several software companies were a little embarrassed when we asked them these questions. Answers included: *‘We don’t really do now, there is no time’*, *‘We are not managing this explicitly’*, *‘It’s Alain you should talk to, he does all of it’*.

Our field studies revealed that, if present at all, most software companies have a rather ad-hoc idea harvesting process, hence the motivation for this practice area. Software companies need to consider carefully how they will harvest ideas. Ideas can originate from various sources inside and outside the company. An infrastructure will need to be put in place to store ideas systematically so they are not lost.

This practice area is about installing the mechanisms for achieving efficient and effective idea harvesting in software companies.

2.1.3 *The Art of Idea Valuation*

If you are a product manager in a software company, you will like this practice area and recognize the dilemma. Imagine that you are faced with a number of requests and you have to select the most valuable one. Which one do you choose? The technical refactoring proposed by two developers who can speed up future developments or the new feature proposed by a sales representative for the German market?

Once captured, the software company needs to understand the value of ideas. Attributing value to ideas is a challenging endeavour. Value can be expressed in many different ways, and value frames tend to vary greatly between different companies. Even internally in the company, different stakeholders will have different interpretations of value. We observed that this can lead to great confusion in software companies, hence the motivation for this practice area.

This practice area is about installing uniform and consistent value frame models for: (1) reasoning on the value of ideas between stakeholders, (2) making ideas ‘comparable’ and (3) finding the best ideas.

2.1.4 *The Art of Openness*

On several occasions, we confronted CEOs of software companies with the question: ‘*Are you doing anything with open source software?*’ The answer was often no. Later, during interviews with the development team, it became apparent that they actually were doing much with open source communities (even contributing), but that the management was not aware of this.

In software companies, doing everything yourself is becoming an illusion. On the other hand, companies need to acknowledge about how much they actually do and do not share. Being open can take many forms. Companies can create open products (e.g., by using open source), have open development processes (e.g., open innovation) or have an open business model (e.g., business models based on open innovation). An organization should be aware of its degree of openness (or closeness) with respect to these different dimensions.

This practice area is about defining an openness strategy for the companies. It is about finding the optimal level of openness at each level, i.e., product, process, organization and business models.

2.1.5 The Art of Optimizing the Impact of Critical Experts

Some people can have a huge impact on software innovation within your company. Somehow, their productivity seems higher and their insights are invaluable when it comes to steering your innovations. Having access to these experts at the right time, even if it is only for a short time, can change the way you innovate.

Unfortunately, most of these people have busy schedules. When you come to think of it, some of them, e.g., lead users, are not even on your pay list.

This practice area is about how you can create an environment in which the impact of critical experts for your innovation can be increased and optimized. This practice area deals with understanding your innovation bottlenecks, installing means to deal with these bottlenecks and ultimately installing communities around your innovation bottlenecks.

2.1.6 The Art of Crafting Smart Products

If you feel threatened by the abundance of software technologies out there or if other players are invading your home markets with innovative solutions, this practice area will interest you.

It will show how to exploit the ICT jungle and how to turn this threat into innovation opportunities: Making your product more user conscious, environment conscious and ecosystem conscious.

This practice area is about being smart with software. It is all about creating products that use information about themselves, the environment in which they operate, or other products in their environment, with the goal to offer new differentiating functionalities.

2.1.7 The Art of Innovation Stimulation

As software is increasing in the value chain, you may want to give higher priority to innovation, but how do you stimulate innovation in a software company when every release is a rat race to meet the next deadline?

In software engineering innovation, it often boils down to problem solving and fire fighting. There is no real innovation culture in many software organizations. Rather there is an attitude of high productivity and working towards deadlines.

Giving time and resources to innovation is a necessity, and this practice area explains how you can get the most out of that investment, and why these activities are needed. Stimulating innovation is so much more than brainstorming.

This practice area is about fostering the right culture to enable innovation. It is all about encouraging internal and external people to participate in the innovation process.

2.1.8 The Art of Innovation Incubation

You have identified a nice and promising new opportunity to explore, but it involves entering a completely new market and mastering new technologies. How will you manage the risks and how will you turn these ideas into real products *or radical innovations*?

As more software companies are leaving the comfort zone of incremental innovation, the need for dedicated incubation support is increasing. Incubation is the process of transforming more disruptive ideas into market solutions. Software companies may be very good at producing ideas but weak in their realization. Innovation incubation can take many forms; it can range from incremental innovations in the form of new product innovations to launching spin-out companies.

This practice area is about creating an incubation infrastructure for transforming disruptive ideas into market solutions so that the software company can move out of its innovation comfort zone in a safer way.

2.2 Structure of the Practice Areas

The eight practice areas are written by different authors and can be read independently. Each of the practice areas is structured in five main sections. A short description of each of these sections is given below.

- *Description and scope*
- *Main activities*
- *Links to other practice areas*
- *Questions*
- *References*

2.2.1 Description and Scope

This section describes the overall purpose and scope of the given practice area. It describes why this practice area is important to software companies and explains the typical challenges to tackle. Where applicable, it presents the way different types of companies interpret the given practice area. Examples are provided to illustrate the importance of the practice area.

<http://www.springer.com/978-3-642-21048-8>

The Art of Software Innovation

Eight Practice Areas to Inspire your Business

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2011, XXI, 200 p., Hardcover

ISBN: 978-3-642-21048-8