

Organizational Patterns

Virtual Organizations' Pattern Language

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Abstract

To increase productivity and product quality in software development, companies invest in qualification of their engineers, improvement of their development processes and many other approaches. We believe that in addition a much more powerful way to go in the above direction is to try new complementary organizational forms of how people work together. Specifically the network form seems to fit modern daily practice and surrounding conditions. The patterns described in this paper are from a pattern language under development at our company. The central pattern „Virtual Organization Units“ was first introduced and reviewed in the „Pattern Writing Workshop at the University of Vienna '99“ with Coldewey, Coplien, Keller, Schwanninger, the others have been developed since then.

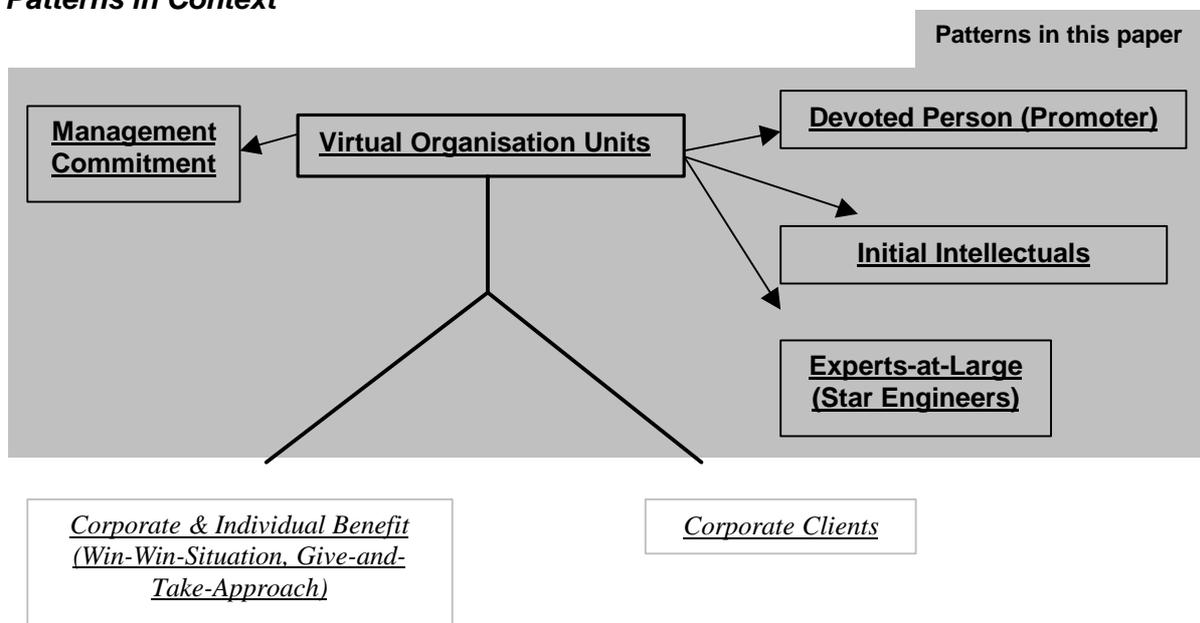
Common Context

This collection of patterns are particularly applicable to big Information Technology and Telecommunication companies with vertical organizational structures, otherwise known as business units. Every business unit covers a specific market segment and technological know how (domain know how like telecommunication networks, telecommunication management networks, bank & assurance, traffic control (air, train, vehicle, etc.). An already established practice of working in well organized projects.

Common Problem

An Institution wants just-in-time support for software projects for specific technology areas and proactive technology management in „cross cut“ technologies. It is too expensive to organize it through dedicated company departments.

Patterns in Context



Interacting Entities

The *Corporate Clients* symbolizes any person or organization unit that uses the competence and support of virtual organization units.

The *Corporate & Individual Benefit* (Win-Win-Situation, Give-and-Take-Approach) symbolizes satisfaction of both sides after hard work. It is the catalyst in the „business relationships“ between the *Virtual Organization Units* and the *Corporate Clients*. The definition of this entity is the most critical and emotional part in the life cycle of the „business relationship“.

Acknowledgements:

Thanks to Ralph Cabrera (cabrerar@agcs.com) who provided a lot of helpful input when he shepherded this paper. Thanks also to our colleagues who reviewed our work during EuroPloP2000.: Jens Coldeway, Serge Demeyer , Stéphane Ducasse, Fernando Lyardet, Alan O'Callaghan, Christa Schwanninger.

Name

Virtual Organization Units

Problem

What should the company do to institutionalize just-in-time support for software projects?

Context

The company develops software for different business domains applying diverse technologies in different development environments. There are project activities and specific technology problems, which are common, and therefore they may be centrally managed to reduce multiplication of effort.

Forces

- People search for new ways to organize support to avoid yet another central department.
- Chance to have a network run cheaper than a central department.
- The company has a grown organizational structure – changes can only be imagined within that frame (networked organization is different). Many people fear change. Management may be hesitant. .
- In every change somebody loses power/control
- Organizational and infrastructural changes always cost money. Return on Investment (ROI) is not easy to measure.
- **Corporate Clients** may suffer under „not-invented-here“-syndrome.
- It is not easy to find evangelists who „run against the wind“ voluntarily.

Solution

The solution is to create a Virtual Organization Unit.

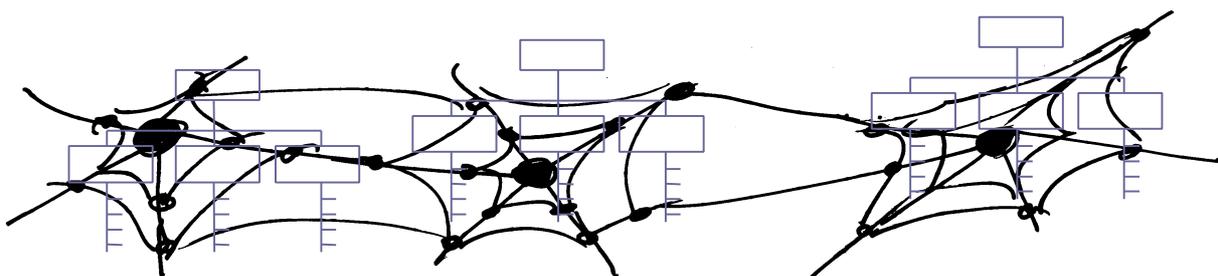
The first step is to start building networks of **Experts-at-large** in specific topics.

The Devoted Person should be supported by the **Management Commitment**.

The **Devoted Person** and the **Initial Intellectuals** build the „node of a network“ (Support Center) which is responsible for the organizational, strategic and technological management of the net. The Support Center keeps the communication and information exchange inside and outside the net alive. It offers and markets its competence and support to the **Corporate Clients**.

The **Devoted Person**, the **Initial Intellectuals** and the **Experts-at-Large**, may all belong to different departments, but build the virtual organization unit.

Sketch



Virtual organization units make companies smarter!

Resulting Context

- Connected networks allow the **Experts-at-Large** turbo-charge their productivity while outpacing the others who are not network-connected.
- Improved communication and know how exchange among the departments, engineers and managers.
- A better management of information, knowledge, and proactive technology.
- Time- and quality-optimized project support.
- A “named thing” is valued almost equally to extern “gurus”.

- Defined and specific topic call centers for the **Corporate Clients** and also clients of the company.
- The involved people should individually take care not to become overloaded – management should support this.

Known Uses

- Management Center Vorarlberg Austria – Publication: MC Notiz 4/99 (in german), Autor: Irene Baumgartner (Management Center Vorarlberg)
- Erste Allgemeine Generali Austria – the document is confidential
- PSE Siemens Austria

Name

Devoted Person (Promoter)

Problem

Who should take the initiative and responsibility to plan and lead the activities, while still completing his core job assignment?

Context

A big software development organization which is willing to be „*networked*“. There is a need for institutionalized just-in-time project support initiative and the company offers enough room to implement it.

Forces

- Not everybody is willing to work beyond her or his job assignment.
- Not everybody may have the social competence and self-management capabilities needed.
- The networks are not easy to build; to keep them working is even harder.
- Software projects need people and have the highest priority.

Solution

The ***Devoted Person*** is an individual or two who strongly believe that virtual organizations are not just only a way to support projects, but they also are the complementary organization form of the future.

He knows the company well and its key persons who shape the company's daily life.

The ***Devoted Person*** needs a core team (***Initial Intellectuals***) to define the ***Corporate & Individual Benefits*** and develop concepts and strategies for the ***Virtual Organization Unit***.

He contacts the managers and the ***Experts-at-Large*** to motivate them to work together (to get networked).

The ***Devoted Person*** periodically organizes meetings to „spread the word“, to fight against skepticism, prejudice and lack of interest, and to find more fans.

The ***Devoted Person*** needs good hiring skills and excellent connections within the company to appoint the right ***Expert-At-Large*** for the project as soon as the need raises.

Resulting Context

The ***Devoted Person*** and the ***Initial Intellectuals*** are the core of the Virtual Organization Unit which is the first and only precondition for the steps ahead.

Related Patterns

Dedicated Champion¹ of David E.DeLano and Linda Rising in the Pattern Language „Introducing Technology into the Workplace“.

¹ In comparison to „The Dedicated Champion“ whose main task is to introduce a new technology into the workplace, the ***Devoted Person*** additionally tries to support projects technically or non-technically just-in-time by the help of his ***Initial Intellectuals*** and ***Experts-at-Large***.

Name

Management Commitment

Problem

Who does advocate the initiative of the **Devoted Person**, his engagement and make it public in the company that the management supports the idea and work? How do you ensure funding?

Context

For the managers and individuals the idea of networking is very new and not necessarily appealing. In the initiative of the **Devoted Person** they see a single persons act only.

Forces

- The managers should share the same enthusiasm as the **Devoted Person**.
- Not even for the top managers it is easy to spread the word. The communication through the management floors is not always "seamless".
- The manager does rather delegate the job then does it himself.
- The managers judge the importance of a work in numbers. If there are no numbers there are no power of persuasion.

Solution

Buy in upper management so local, upper and top management support the initiative of the **Devoted Person**.

The local and upper management helps to solve problems, such as:

- resources (hardware infrastructure, software environment)
- adjustments of the **Devoted Person**'s core job assignment (concentrating on network-specific topics)
- time management (approx. 70% of the **Devoted Person** time for his core job assignment and 30% and more for the network activities)
- knowledge management (information support on who-knows-what)

The top management „spreads the word“ and emphasizes the importance of the network concept, i.e., on every occasion it communicates its ideas and pro arguments and the benefits for the corporation and its individuals.

Resulting Context

Everybody in the company knows that the management not only supports the idea but it also honors the participating individuals in one way or another.

Related Patterns

Local Leader of David E.DeLano and Linda Rising in the Pattern Language „Introducing Technology into the Workplace“ is partly related. It refers to the above local management.

Name

Initial Intellectuals

Problem

How does the **Virtual Organization Unit** show competence in specific topics (especially in the early stages), so that the idea of networking and its meaning to managers, projects and engineers becomes established? Why should the **Corporate Clients** give credit to a new virtual organization unit?

Context

The **Corporate Clients** discover knowledge deficits as they are confronted with new tasks. To minimize them in a short time the virtual organization unit can be asked to help (immediately).

Forces

- Not all experts are well-known overall within the company.
- Decisions based on individual visibility should be verified by the others in the management.
- Coming from a different part of an organisation sometimes makes it hard to be accepted. Information and personal connections surmount political „obstacles“.
- In every environment there are unwritten guidelines to deal with local politics.
- Choosing the wrong expert can be a real roadblock to the corporate client.

Solution

From the very beginning the **Devoted Person** should establish a core team of star engineers who are well known experts in different disciplines in the company and advertise for the team among the **Corporate Clients**.

The **Devoted Person** trusts in his experience and information level while choosing the right star engineers. But, he should still verify his choices with the others.

Before the **Devoted Person** contacts personally an expert he should get information about his departments, his project situation, and eventually meet his superiors.

The names of the **Initial Intellectuals** are very good publicity and will be very convincing that the **Virtual Organization Unit** has competence in providing the right individual for the right solution in the first period (“*just-in-time support*”).

As a future work, the **Devoted Person** should develop a strategy to grow experts from willing non-experts as soon as possible to extend the **Initial Intellectuals**.

Resulting Context

The **Virtual Organization Unit** has now a very strong basis

- to convince the **Experts-at-Large** to cooperate and
- to support projects *efficiently*.

Name

Experts-at-Large (Star Engineers)

Problem

Who are the best candidates for the network and how can they become motivated to participate?

Context

In all departments and projects there are always some people who know more than others.

Forces

The experts are not always enthusiastic about being networked:

- Such people are rare and expensive and often happy to stay anonymous.
- They have always more than enough to do.
- In the first run they don't see any benefit in being networked.
- They sometimes are individuals who like to work alone.
- There are also people around who just look for a nice place to stay.

Solution

There is no hard-wired recipe in recognizing an expert. Cognitive, personal, social and organizational characteristics are necessary to recognize an expert, not only the right metrics. An ideal Expert-at-Large has got a lot of experience in a specific area and is able to transfer his experience into practical solutions.

Some ways to identify experts:

- The best way to recognize an expert is to ask people, to ask for names in gangways and in coffee breaks. The ones who people speak of well all the time, those are the experts.
- Some experts may be found in company-internal training centers.
- Asking project leaders and quality managers helps.
- Some may be identified in company-internal publications, presentations, lectures and workshops.

One way to come to experts is to grow experts. Today's willing non-experts are, may be, future experts. With the help of training/mentoring they may be put into the **Expert-at-Large** role. This is a strategy which should also be used to extend the **Initial Intellectuals**.

The **Devoted Person** should then interview experts to get his „know how cv“. This is a very important topic.

To motivate the experts to participate in virtual organization units is not easy. This pattern offers some motivations:

- The experts may know 80 percent, and until they get to know the rest, they are stuck. What helps them is an effective networking.
- They get some individual benefits like having more fun in their job, having more freedom in shaping their jobs and careers.

Resulting Context

Having good names of experts is a very good start. It does though entail with personal engagement of the **Devoted Person** to keep them informed about the activities of the **Virtual Organization Units**.