Patterns for Technology Companies
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1 Abstract

This paper builds on the author's earlier work (Kelly, 2005a, Kelly, 2005b) by adding two more business strategy patterns that describe common strategies used by technology companies; specifically software companies but the strategies should be extensible to other technology sectors. These patterns are:

- *Products with Services*

- *Corporate Certified Experts*
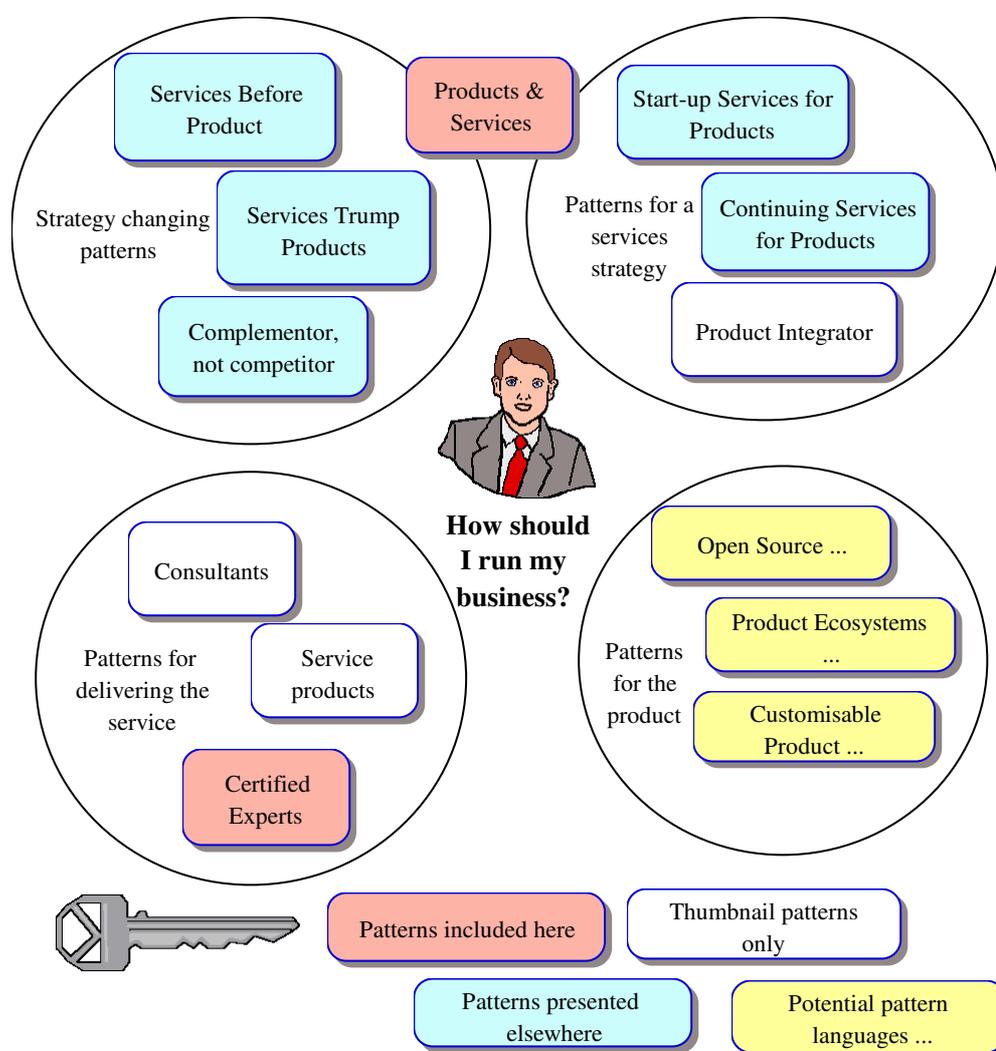
Figure 1 – Pattern map

2 Audience

These patterns are intended to codify several common business practices in a pattern language so that they may be communicated and studied more clearly.

The patterns given here are intended for those interested in how corporate strategies may be applied. This group includes both students of the subject and new managers.

The author is interested in the applicability of the pattern form to the business domain: whether the form works, what insights it can offer and what value it offers in codifying and communicating business practice.

3 The Patterns

The following are thumbnails of the interrelated patterns shown in Figure 1. Patterns marked with an asterisk were presented at VikingPLoP 2005 (Kelly, 2005a).

Products with Services **Page 3**	Technically complicated products are not commodities; they can be hard to use. Therefore, offer services to help the customers in addition to the product, e.g. a support desk and training courses.
Corporate Certified Experts **Page 8**	You and your customers want to know who is competent to work with the product in depth. Your staff can't do all the work. Therefore, segment the user base by offering to certify those experts who know the product in depth.
Start-up Services for Products*	Your product serves a complicated market, consequently your product is complicated. To get the most from the product, customers need help. Therefore, create a professional services group within your organization and sell consultancy services to help the introduction of your product.
Continuing Services for Products*	Complex products often require continuing maintenance and support. The company that makes the product already knows a lot about it, and so is well placed to perform this activity too. By sharing knowledge between services and products operations, both can be improved.
Complementor, Not Competitor*	Choosing to compete in multiple product categories against multiple competitors means you sometimes compete against companies that could help sell your other products. Therefore, withdraw weaker and less strategic products, you can now complement your former competitors and increase sales of your leading products.

Services Trump Products*	Your company has been successful selling products but you are running out of growth, you may already be losing money. Therefore, use your knowledge of the products to move up the value chain and sell services instead of or in addition to products.
Services Before Product*	You are creating a start-up company but you are short of money, need a better understanding of the market, or both. In order to get a better understanding of the market you need to get into the market. Therefore, sell consultancy services to start with, you will generate money and get a feel for the market before you start work on your product.

As a result of workshop sessions for these patterns at EuroPLoP 2006 three new patterns were identified:

- *Account Management*;

- *Pre-sales Consultancy*; and

- *Segmented Customers*.

3.1 PRODUCTS WITH SERVICES

New cars often come with a free first service; washing machines come with a years' warranty and software with a support help line – or at least a website. Adding a service element to a product recognises the complexity, helps customers use the product and differentiates the product from a common commodity.

Some producers go further; they may extend the warranty or offer additional services, like training – such services can generate extra revenue too. Pure product companies are becoming less and less commonplace.

Context   You produce a technically advanced product, e.g. enterprise software.

Problem   Sometimes your customers get stuck with your product. They don't know how to use it, they don't know what it expects of them, or it doesn't seem to be working as they expect – it may even have developed a fault.

How do you help your customers overcome the barriers to using your product?

Forces   Technically advanced products often solve many customer problems but bring problems of their own; e.g. software contains bugs, manuals need reading, customers require training, installation is hard.

Customers may have bought your product but they are not using it to the full. Some users may be unaware of valuable features, others may have encountered problems on first use and not tried again.

You want to sell more product but customers don't see the value in your product because of difficulty using it. You may miss a sale entirely or be forced to discount the product to make a sale.

You want to improve the product but, without customer feedback, you will just be guessing. What do customers find difficult? What features do they find missing? What features will they need next year?

Solution   **Supplement your product with services to help the customer maximize the value they get from your product.** Start with basic services like technical support and training; later you can expand this with additional services – however, used incorrectly, this pattern can cause problems; see *Continuing Services for Product* (Kelly, 2005a).

In the technology sector, even pure product companies will find the need to provide basic technical support for their products. This may be offered free of charge for an introductory period, say the first year, after which customers may be expected to pay either a fixed sum – perhaps 10% of list price – or pay per call.

Training services can help users get more from your product. New

users can be helped through the initial learning process and more experienced users can benefit from learning about new and advanced features. Always work with your customers to understand what their training needs are and how you can best help. Other services may be offered during initial adoption of the product and throughout its life-time of usage.

However, providing services might not always be the best answer. It might be better to address problems in the product itself. Sometimes products are complex out of necessity; i.e. the problems they address are complex, so adding a service element is acceptable. On the other hand, products may be unnecessarily complex, so that rather than selling customers additional services a better solution is to simplify the product.

Training can be a substitute for making a product that is easy to use. Companies that rely on training users, rather than making simpler products, are vulnerable to competitors with such pleasantly facile offerings. Periodically, look at your training programmes – both the content and delivery and consider what material could be omitted were the product to be changed or simplified.

For example, one of the present author's colleagues once sat in on a customer training session. After observing what was being taught and how users responded, he was able to recommend several modifications to the product to make it easier to use and thus reduce the training needed.

Do some analysis before rushing to complicate your offering with services. It may be that a better understanding of the problem domain may result in a better design with consequently less need for services. If your competitors market a complicated product with services, you may gain the advantage on them by offering a simpler product without services.

Consequences Offering support and other services all help you understand your customer in more depth and extend your knowledge of the domain. Providing a support desk will make you more aware of customers difficulties. Even simple queries ('How do I...') can provide information on how the product is used and perceived. More complicated problems ('It crashes when I...') may demand an immediate fix and highlight issues concerning future products.

Resolving customer problems will allow you to demonstrate usage and value. Increasing the product's value to the customer will increase the chances of further orders.

Sending trainers and consultants to visit customers will allow you to identify and fix problems with product usage. This might be as simple as helping a user with a difficult action or simplifying features in a future release.

When your people engage with customers in service rôles, they can learn what customers find difficult, what features the product lacks

and what future opportunities exist for your product(s). So make sure you provide customer-facing staff with a channel to feed back such information to the product managers.

You can charge for support, training and other services. This provides for an alternative revenue stream. However, services can be expensive to provide; support desks must be staffed even when there are no calls. A low quality product may result in more calls and thus more expense. (See *Continuing Services for Product* (Kelly, 2005a) for more discussion on this topic.)

For a company that considers its core competence to be creating technical products it may be hard to justify support services and to position them in the organization.

As you supply more products and services to a customer, both sides become more dependent on the other: the customer on your products and services (and you) on their revenue. This provides the opportunity, indeed the need, to engage in proactive account management, so that both sides understand each other well. As you understand your customers better, you will find more opportunities to help them with products and services that in turn create greater revenue for your company.

Variations	If you are not able to provide the services yourself, you may choose to collaborate in partnership with an organization that can provide all or some of the required services. You must ensure a 'feedback' mechanism is in place so that you indeed get to hear about customer problems and needs.
Examples	Most software companies provide help desk support for their product range that will answer technical questions and help users with difficulties.
Also known as	–
Related patterns	Kelly (2005a) gives several related patterns that may follow on from this one:

Start-up Services for Products describes how services can be provided to help hold a customer's hand during the initial stages of adoption.

Continuing Services for Product describes how services can continue to be offered for a product after this initial adoption.

Sometimes it is more profitable to supply the services than products. *Services Trump Products* describes how companies change. This may involve using *Complementor, Not Competitor*.

This sequence is shown graphically in Figure 2.

Sources	Authors observations and experience.
Presented	EuroPLoP 2006

Products and Services changes over time...

Time

First you sell the technology

... then you provide some help to get it going...

... customers need ongoing help...

... then you decide to sell just the services...

... so you get out of the product business.

Patterns you need

Start up Services for Products

Ongoing services for products

Services Trump Products

Complementor not competitor
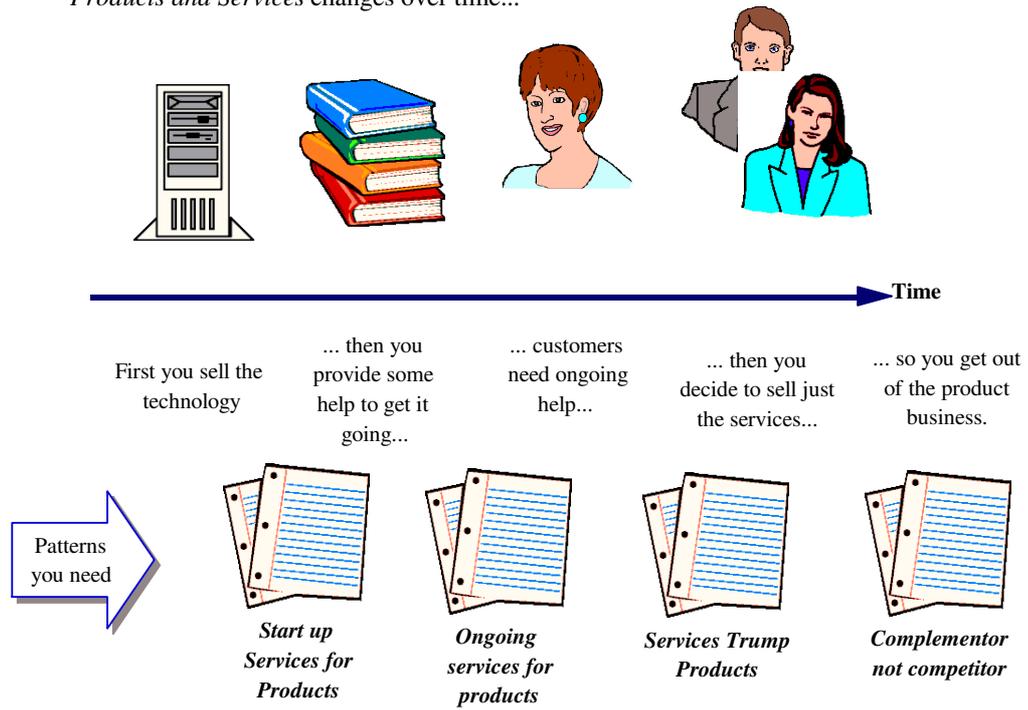
Figure 2 - Products and Services is the root of several other patterns

3.2 Corporate Certified Experts

During the late 1980s and early 1990s, Novell Netware was the most successful PC networking system. But it was difficult to install, configure and administer. So Novel created the Certified Novell Engineer (CNE) *programme. If you needed a Novell network, you hired a CNE to look after it. Individuals found they were worth more if they were certified and several service organizations added CNE services to their offerings.*

Context You are marketing a technically complicated product that requires a few expert users to operate it correctly.

Problem **How do you and your customers know who is proficient to use your products?**

Forces The product may expose several different interfaces but at least one requires in-depth knowledge; e.g. vending machine may appear simple to casual users but very differently to the service technicians who repair such machines.

You need to be able to distinguish between expert and non-expert users of your product.

Your service organization can undertake advanced work (e.g. installation and configuration) for customers but this makes customers dependent on your service organization.

Your organization wants to concentrate on products but the need to deliver services for the product dilutes your focus, e.g. managers spend time discussing services rather than products.

Some organizations may not want to be dependent on your service organization, and if your product is successful that very service organization may not be able to serve all potential customers – resulting in lost sales.

Users outside of your service organization may be capable of performing the necessary work but how do you, or your customers, know who has the advanced skills and experience necessary and who doesn't?

Individuals want to be associated with your brand and offer services to your customers; but, you don't want just anyone associating themselves with your brand. If it is too easy for people to claim knowledge of your product, they may damage the reputation of your company's offerings.

Solution **Segment your user base by creating a certification programme for advanced users.** You will be able to target documentation, training and features at different types of user; your customers will know who is capable of undertaking work on your product.

You will need to create a test for those seeking certification. You will need produce materials for those studying for the test and ensure

those certified are up to date with changes; e.g. certification might be tied to a product version, or re-certification may be required every year.

It may be necessary to create multiple certification programmes for different products or different aspects of the product; e.g. Novell certifies Netware Administrators, Netware Engineers and SUSE Linux Professionals. You may also want to create certification for trainers who can train others in your products.

Make sure you cost the programme and understand its funding in detail. Creating a certification program can be expensive: materials must be created, tests set and administered, and the programme kept up to date. Ideally, the programme would be self-funding (people pay for certification) but if you have a small customer base it can be difficult to make certification return a profit..

Big companies with well-know brands will find it easier to create certification programmes because they have the resources and brand exposure to create the qualification; and they can afford to wait while the programme becomes established. For a small company, however, such a programme may represent a drain on finances that it can ill afford.

Consequences   By distinguishing between users you can target different interfaces and materials (e.g. documentation and training) at different types of users and levels of experience.

Your service organization is no longer the only one to contain people who can undertake complex work. Customers can now choose your service organization, a certified third party organization or an individual; or they can train their own people and do the work in-house.

Even when your service organization is fully utilized, sales can be made to customers who could buy the necessary services elsewhere. However, letting others replace your own service organization may weaken your relationship with your customers by increasing the distance between them and you, and by involving third parties. Consequently, you may miss important business opportunities.

Third party organizations may decide to add your product(s) to their service portfolios. This may result in reduced revenues for your service organization but increase sales of your product.

Your company can focus on its products again, rather than on supplying services.

Individuals may find that certification makes them more employable and allows them to command higher wages.

The existence of individuals and organizations who can support your product will enhance your market credibility and make your product a less risky purchasing decision, thereby increasing sales.

Variations   –

Examples	Novell's Netware certification programme helped Netware become the leading network operating system in the late 1980s and early 1990s. After purchasing SUSE, Novell expanded the scheme to provide Linux certification.
	Microsoft and other enterprise software providers offer similar schemes for their advanced products and technologies.
Also known as	–
Related patterns	-
Related patterns	–
Sources	Authors observations.
Presented	EuroPLoP 2006.

4 Acknowledgements

History

October 2006	Final post conference edits
July 2006	Post conference revisions: original paper split into two, one contain *theory* (Kelly, 2006) and this paper containing two patterns.
May 2006	Interim version posted on web
February 2006	Submitted to EuroPLoP 2006, shepherding begins.
January 2006	First draft

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