

Editor's note: The seven installments of the mini-course presented in the weekly ASIT newsletter referred to here will be combined into 3 articles for the TRIZ Journal. Part 1 appeared in October and Part 2 appeared in November.

New Product Development Mini-Course, part 3

Roni Horowitz, Ph.D.

Roni.horowitz@start2think.com

In the July issue of the TRIZ journal, you can find a review on my new e-book, "How to Develop Winning New Products Ideas Systematically." Read the review at <http://www.triz-journal.com/archives/2004/07/07.pdf>, and buy the book from <http://www.start2innovate.com>

Many people have written to me asking about the difference between the ASIT Premier course and the new e-book about New Product Development (NPD). Read the review of the course and associated book at <http://www.triz-journal.com/archives/2003/04/e/05.pdf> or order them directly: [Click here](#). After giving it much thought, I've decided to write a 7installment mini-course to help you appreciate the basic principles behind the NPD tools and principles. This article is composed of installments 5,6, and 7 of the mini-course.

The NPD mini course

Installment 5

Listen to the voice of your.(virtual) product

In previous installments of this course you learnt how constraints enhance creativity; how the Closed World principle enables you to inject the right kind of constraints into the problem and how thinking patterns such as Multiplication can help you identify exciting product ideas within the closed world.

Here is a high-level view of the process: we start with our product, using an ASIT tool, we alter it within its closed world. We use what we get to ignite a thinking process that leads to breakthrough product ideas. This process is called 'function follows form' since it begins with a form (the virtual product) and ends with a function - one that fulfills the needs and wants of a specified audience.

'Function follows form' and the 'Closed World' principles go hand in hand to create ASIT's powerful thinking environment and differentiate ASIT from all other methods.

The product, after applying an ASIT tool to it and altering it in some way, is called a *virtual product*. To create winning product ideas from the virtual product we have to "listen" to it carefully. This contradicts the most common advice businesses get today: "listen to carefully to your customers"

The slogan 'listen to the voice of your customer' is so popular today that the marketing world even invented the term "prosumer" (Professional + consumer) to denominate a consumer who is knowledgeable enough to help design or customize the products they purchase. It seems to me that businesses nowadays actually "outsource" their invention process to their customers.

The ASIT process - by drawing new product ideas out of current products and tapping existing skills and technologies - reduces the chance that you will come up with ideas that are impractical to produce or market. And using systematic patterns to generate the ideas, rather than the preconceptions of customers or marketers, liberates your thought processes from the straitjacket of existing concepts and assumptions.

"Listening to your product" requires you to perceive it in an entirely new way. Begin by breaking the product down into its essential physical components. A telephone, to take a mundane example, consists of a microphone, a speaker, a handset, a base, and a keypad, along with wires and other components to connect and package these parts.

If you are going to apply a pattern such as multiplication, this is all the deconstruction you need to do. But to get a complete picture of your product - and to apply the entire array of patterns - you need to itemize further. List the product's attributes (our basic home telephone model, you might say, comes in six colors and lasts about ten years) and the physical and other aspects of the environment in which it is used (it sits on a flat surface and is typically used by older customers).

With this list in hand, you can use one or more of the six patterns to rearrange the elements of the product and its environment. Doing this will allow you to imagine a number of virtual products. It is important at this point that you don't judge these virtual products, no matter how strange they seem. Too often, developers quickly filter out product ideas because their value to customers isn't immediately apparent - or because their uselessness appears obvious. Of what use can be a non-recording tape recorder be? This was the same question asked by Sony people before they stumbled upon an untapped billion-dollar market of walkers and joggers for its Walkman tape player.

So here is the story again.

ASIT works by creating a "virtual product" under the "closed world principle" using one of the six ASIT tools. After creating the virtual product you need to conceive and develop a market that would find immediate benefit from this virtual product. Having discovered this market, the product is then developed and improved around the needs of this market.

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The NPD mini course
Installment 6
Sacrifice - A tool for generating surprising product ideas

In the past 5 installments we discussed ASIT logic - simple, but extremely powerful:

We begin with our baseline product, and manipulate it using one of ASIT's six thinking tools to create a virtual product that conforms to the Closed World principle. The virtual product is developed into a full product idea by asking two major questions: what is the target audience, and what are the main benefits for this target audience. Products developed in this way surprise the market by responding to unmet needs that the market could not communicate.

Beginning with the *product*, and not with the customers' needs and wants, as advised by most of the innovation experts, is a process called "function follows form". This unique process is responsible for the uniqueness and originality of ideas that can be produced with ASIT.

In Installment 4 of this e-course, we discussed the Multiplication tool. Using Multiplication, we create a virtual product by adding to it a copy of an existing component that differs from the original in some important way. Gillette's twin blade razor is a classic case in point.

Today I'll introduce you to another ASIT tool - the Sacrifice tool.

Using the Sacrifice tool we'll develop a virtual product by subtracting an important component from our product. The more central and important the component that one gives up, the more "WOW!" the idea you'll get.

Here's a short exercise. Complete the sentence.

To get a virtual product from the baseline product, Car, you would subtract the.....

To get a virtual product from the baseline product, T.V. set, you would subtract the.....

To get a virtual product from the baseline product, Computer, you would subtract the...

Here are the correct answers...

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To get a virtual product from the baseline product, Car, you would subtract the *engine*

To get a virtual product from the baseline product, T.V. set, you would subtract the *screen*

To get a virtual product from the baseline product, Computer, you would subtract the *processor*

Of course you can also try to create a virtual product by subtracting components that are less central to your product, but again, the more important and central the component you remove, the more original and surprising the idea you will come up with.

The tool is called the “Sacrifice” tool to emphasize the fact that you have to give up on a component you conceive as essential to your product.

Here is a real world example for a very successful application of the Sacrifice tool. Let's work through this example together.

Here's some background.

We're going back in time about ten years. There is only one cellular operator in Israel, called Pelephone (the name means Magic Phone). This company's brand is based on high quality sound, good coverage of the country, and prestige expressed with high prices.

A new company, Cellcom, is about to enter the market. Initially their sound quality is mediocre at best, their coverage quite poor, but their prices are very VERY COMPETITIVE.

Yes, the people at Pelephone know Cellcom's penetration strategy is going to focus one feature...price.

Now, suppose you are one of the Pelephone managers. What would you do?

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Let's begin with what would be a fatal mistake: fighting back on price. This would wear out their profits, and even more importantly, harm their prestigious position in the market.

Another no-brainer would be to add features and services, but this would also harm their profitability.

So let's try to find a solution to Pelephone's marketing dilemma using the Sacrifice tool.

First list the components of a mobile phone. (Actually we should have listed the component of a cellular service, but to make things simpler, we'll base our development process on the instrument itself).

OK, do it... Now...

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Here's my list:

- Antenna
- Transmission and receiving system
- Case
- Keys
- Memory
- Microphone
- Speaker
- Software

And more.

Our next step will be to remove one of the components.

Let's remove the transmission system.

Our virtual product is mobile phone that can only receive calls. You can't call anyone.

Let's move ahead because this idea is useless...

Hey, not just yet!

Our first reaction to a virtual product created using the Sacrifice tool would be the same...by definition. We need to think about who would buy a mobile phone lacking the ability to call?

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Well...maybe people buying the phone for someone else that they would want to be in contact with? For example, parents may buy it for their kids. Or employers may buy it for their employees.

And this is what Pelephone did:

They came up with a new and revolutionary product called Mango. This was a mobile phone you could receive calls on, but couldn't call out on.

As such, it had no bill and no billing system. It was sold in drugstores in much the same way as any other simple commodity that was also a revolution at the time.

Incidentally, the instrument itself had the transmission system, but it was software disabled. The idea was that the customer could upgrade their Mango at will to become a regular instrument.

This product was a great success that helped Pelephone dramatically decrease the market share they were losing to the new company.

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The NPD mini course
Installment 7
Wrapping it all up

In the previous installment, we discussed the Sacrifice tool. Today I'd like to discuss the rest of the ASIT tools briefly, and wrap up with some insights.

But before I list the tools, here's a quick reminder of the whole ASIT process:

We begin by listing the essential elements of a product - both its physical components and attributes, such as its color, weight or price. We also look at the product's immediate environment, again identifying both its physical aspects and characteristics, such as the ambient temperature or the age of the user. Then, following one or more of the six generic *innovation patterns* that ASIT offers, we manipulate these elements to come up with something new.

This new entity, the *virtual product* in ASIT's terminology, must conform to the principle of the *Closed World* and is our starting point for developing a full-blown product idea.

Identifying a target audience that can benefit from the unique features of the virtual product and adapting the product to the special wants and needs of this audience is what develops the idea.

Here is a schematic description of the process:

Our existing product <ASIT tool> virtual product <adaptation> full-blown new product idea

As you see, with ASIT we always start with what we already have.

Why take my word on this? This is what an ultra-creative person has to say:

*“There is no abstract art. You must always *start with something*. Afterwards, you can remove all traces of reality”.* - Pablo Picasso

The role of the six ASIT tools is to help us arrive at a promising virtual product, one that would invoke a thinking process leading to winning new product ideas.

Here is a brief description of the six tools:

The **Sacrifice Tool** guides us to create a virtual product by removing an essential component from our product. Removing the picture tube from a television arrives at an idea for a device that allows a car or truck driver to listen to their favorite TV program.

The **Parasite Product tool** tells us, once again, to remove an essential component from our product and replace it with an element from the close environment. Removing the picture tube from a television and replacing it with a computer screen helps us arrive at the idea of a television card.

Unification - A reversed process: our product takes upon itself a function of other products in its environment.

Multiplication - Select a part and add several more or slightly different parts to the product to discover new benefits.

Division - Divide the product into two units in different ways and reorganize the parts. The brand, Bertolli offers salad dressing. Normally, a particular substance is needed in order to keep oil and vinegar from separating again. So what did Bertolli do? They simply didn't use this substance (Sacrifice) and came up with a product in which two liquids are clearly separately visible in the bottle (Division): one at the bottom, one at the top. To use this dressing, just shake the bottle. Because oil and vinegar are different colors, it looks good and also clearly distinguishes this brand from others.

Breaking Symmetry - Remove some aspect of symmetry in the product. A good example is our invention from the first installment of this course - different sized pain relief pills in the same package. The customer selects the pill according to the intensity of the pain.

In the full version of the book, each tool has a separate chapter starting with several examples and personal experiences before presenting a detailed example with clear directions. The chapter ends with variations on a theme for that specific tool.

I hope that you now see why ASIT is a systematic tool that demonstrates how to quickly and easily come up with simple, original and exciting product ideas. And I really hope that you are inspired to learn more!

ASIT actually frees us from relying solely on our customers to develop our new products and services.

And here's why this is so important:

Clayton Christensen the author of the bestseller "*The Innovator's Dilemma*" sensitizes us to the fact that in virtually every commercial situation, we become fixated on satisfying the needs of our most important customers. We come to see the world through their eyes. In fact, the whole process of innovation and resource allocation is *held hostage* to these customers. We become entrenched in their needs and problems. While it seems that this is wisdom, in fact it becomes a liability to growth by creating difficult business and technical paradigms.

Ultimately, every business reaches a time when it becomes important to grow into new markets. Clayton Christensen points out that it is difficult (for many reasons beyond the development of innovative ideas) to break away from the death grip of these primary customers. It is especially problematic when marketing tries to identify new markets. Up to this point, marketing has been able to use standard marketing tools to study the existing markets. If we use these same tools to study new markets (as is commonly the case) the effects are disastrous and usually come at a high financial penalty because we are trying to anticipate the needs of a market that does not yet exist! At the same time, it is difficult to identify needs from any point of view other than our primary customers. In short, new product ideas continue to focus on the problems and needs of our most important customers. How can we systematically break away from this form of ingrained thinking? *This is where ASIT comes in.*

Remember! If Henry Ford had asked his customers, they would have said that they wanted faster horses!

I hope you enjoyed this mini series. If you want to learn more about how to get winning new product and service ideas, please visit:

<http://www.start2innovate.com> and get your copy of my new e-book, "***How to Develop Winning New Product Ideas systematically***"