Business Innovation Consulting LLC

Insights

How to Develop New Products While Saving Time and Money

Avoid Reinventing the Wheel: How to Develop New Products While Saving Time and Money

"If I have seen further it is by standing on the shoulders of giants."
- Isaac Newton, letter to Robert Hooke, 1676

In the article ***Generating BIG HITS with a Skinny Wallet***, we explained a strategy that leverages existing technologies to launch multiple breakthrough products. One of the first principles of successful innovation--which we call implementing the "Universal Mind"--is to maintain a user-friendly technology database to fast-forward the process.

We've seen that groups that continuously reinvent the wheel, coming up with new solutions to old problems are slow to advance, while those that effectively build on the knowledge of others advance much more quickly.

Unfortunately, when it comes to applying technology to the problem of creating new products, many companies insist on reinventing the wheel. They lack a system and culture to encourage capturing, and then drawing on, established technologies. Without the so-called Universal Mind, they are unable to capitalize on an existing technology knowledge-base.

5 Benefits of a Technology Knowledge-base

Making technologies and solutions available across the organization brings significant benefits, including:

- Increase speed to market: Others have already shouldered the investigation and development costs.
- Increase probability of product development and market success: Products built on proven technology platforms reduce risk of expensive surprises further along in the product development effort.
- Improve organizational communication: Cross-organization collection and access to common knowledge promotes collaboration across organizational boundaries.
- Knowledge preservation: Increase retention of intellectual assets in the event of employee turnover.
- New sources of technology: Technologies ranging from internal, company-wide, and from external, non-traditional sources are captured to provide a competitive advantage.

Conversations around the water cooler can deliver these benefits in a very limited way. But, widespread "conversations" are not all that difficult to achieve with a technology knowledge-base—a systematic method of gathering and sharing information.

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What if each conversation about finding technology solutions were recorded and accessible at any time to anyone in an organization? The inputs to this *Universal Mind* include language (conversations), articles read, seminars attended, etc. The database that houses the information (the collective memory) allows the information to be easily captured and shared.

Language and Memory Drive Innovation

	Language	Memory
Best For	Content Evolution	Content Utilization
Connectivity	"the Human Network"	"the Computer Network"
Attributes	• Creative Development • Leads to Technologies from non-traditional sources	• Asynchronous – access any time • Permanent • Universal access

Our ability to build on the knowledge of others through *language* and *memory* influences our ability to innovate. Consider these two aspects:

Language - Drives the Content Evolution

Language allows us to navigate the human network. Sometimes the language of an organization can become a barrier that impedes conversation. But, where there is genuine conversation, creativity flourishes—and often produces referrals to unexpected sources—leading us to identify technologies in areas we would not otherwise consider. This creative process repeats itself, with the solutions slowly distributed virally across an organization, subject to limited memory recall.

As we navigate each thread in the web of the human network, much of our success is dependent on the quality of the network, its availability, and pure luck. Each of these precious threads produces interesting opportunities, but those not of immediate interest are lost.

Language is necessary for creativity and innovation, but it is not sufficient. Organizations must utilize this knowledge and share it - water cooler conversations can only get you so far. This is where the computer network comes into play. It provides the memory and accessibility the human network cannot.

Memory (Database) - Drives Utilization

If the human network can be viewed as an approach best for creative solutions, a faster and more comprehensive approach is needed to allow for more efficient access to the results of language-driven solutions and information.

Databases have become the medium by which large amounts of information are captured, organized, and broadly accessed. The true value in such databases comes from providing:

- Standardization
- Universal access
- A culture of contribution and use

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The biggest challenge in creating an effective database is simply: What should it contain? Databases can be designed for access, ease of use, and other general considerations. However, much of the magic of effectively designed databases for technology utilization lies in the information that's included and the ease with which it can be found.

2 Keys to Technology Knowledge Sharing through Databases

Through years of assignment research, Business Innovation Consulting (BIC) has developed an extensive technology database that allows for easy access and sharing of knowledge. The two key elements of this knowledge sharing are the organization of the database and the content captured within it.

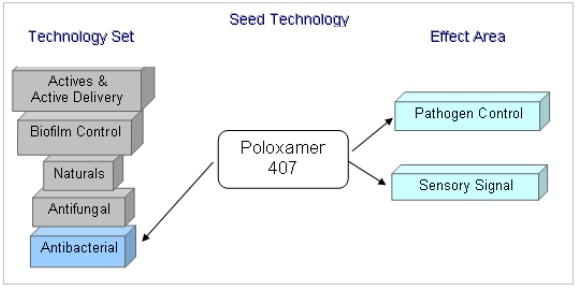
Organization

Consider organizing technologies by effect (what it does) and set (like attributes). For example, at BIC we follow these database rules and organize our technology by:

- Seed Technologies: The basic technology element.
- Technology Set: The fundamental group to which the seed technology belongs. (Each Seed Technology belongs to only one Technology Set, and a Technology Set will likely contain many seed technologies. The number of Technology Sets will increase with the breadth of Seed Technologies to be recorded.)
- Effect Areas: What the technology does.

As an example, take the Poloxamer 407 technology. We organize this in our database under the following areas:

- Seed Technology: Poloxamer 407
- Technology Set: Poloxamer 407 is a substance that has antibacterial properties. For the purpose of the initial investigation, its use is as an anti-bacterial substance, so it is assigned to anti-bacterial technologies.
- Effect Areas: Its effects are in Pathogen Control ("anti-bacterial"), but also as a sensory signal, since its viscosity changes with temperature and can provide a sensory signal in many consumer products.



Content

In addition to these organizational groups, certain information on each technology must be captured:

- Description: What is it? What does it do/solve?
- Documents: An area to store patents, articles, or any other supporting information.
- Contacts: The sources of the technologies.
- Ranking: A system of assigning how useful or appropriate the technology is for particular applications (a topic for another paper!).
- Key Words: To help locate technologies.

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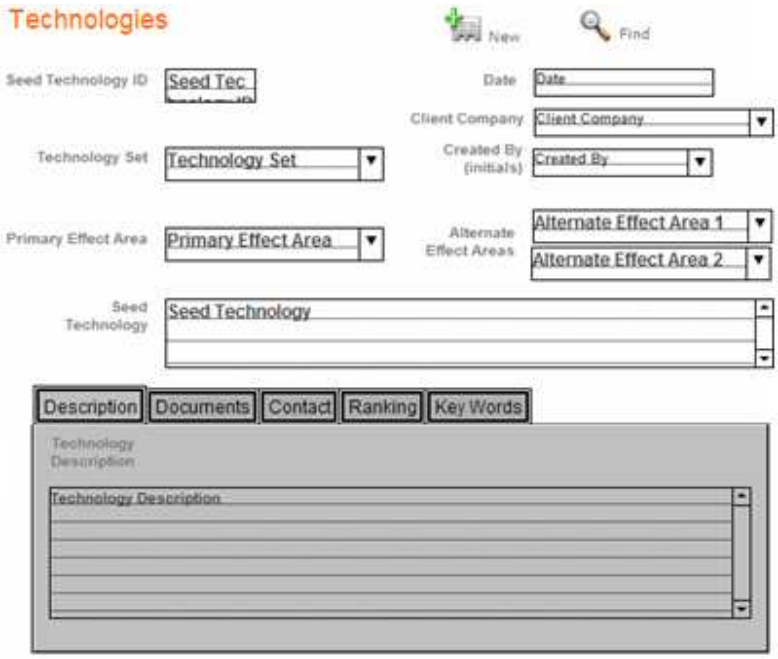
Below is a screenshot from BIC's technology database. Each field has a pull-down menu to speed entry of a new technology. Each field is also searchable, allowing a user to quickly capture technologies of interest in response to a query.



Going back to our example of the Poloxamer 407 technology, consider a user is looking for technologies to address the Effect Area of Pathogen Control. A search for "Pathogen Control" returns 36 technologies, one of which is Poloxamer 407, with full description, technical references, sources, etc., as shown in the screen above. This information is at the user's fingertips and saves hours, if not days of research, data gathering, and development. The user can then take this technology to use as their foundation rather than having to reinvent the wheel.

A Systematic Approach Yields Results

At BIC, the use of this database has become part of our culture, and represents a real asset of our business, one that we are able to leverage across many business applications, with minimal IT investment.

By basing new product development activities on technologies already available and proven, significant time and money are saved. Having access to a considerable library of technologies when conceiving the next Big Hit product has proven to be indispensable.

Reinventing the wheel, while spectacular in result when it happens, is like betting on the 1000:1 horse to win. The weighted risk of product success favors a more systematic approach built on proven technologies.

Today, the idea of cross-cutting technologies and technology platforms is more than theory, it is a valuable practice among our most successful clients – all enabled by implementing the physical equivalent of the Universal Mind.

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