

PARAGON Perspective

From the President

PARAGON Perspective is sponsored by PARAGON Development, an international consulting organization specializing in new value creation for corporations. This is accomplished through new business development and optimized planning in addition to corporate venturing. The purpose of this newsletter is to update, educate, stimulate, and enlighten our friends and business colleagues on many topics involving new business development as well as the world at large as it may affect our businesses and/or our professional interests. We are not intending, and will not use this communication to promote our business. There are other times and places and opportunities for that.

We hope to inspire debate and pass along information that may enable all of us to better understand and succeed in our new business objectives in the future. We further hope you pass these along to colleagues who may have mutual interests.

We want to use this forum to do the following:

- Share information we have learned that we consider important concerning best practices, trends, successes and failures, conferences, and other elements that will enable all of you to grow your organizations with maximum top and bottom line results.
- Share information about select client initiatives that may be of interest based on technologies, markets, or business needs that you believe could fit within the scope of those client's interests.
- Share opinions.
- Share personal observations and even humorous items given to us by others.

We welcome your comments on any topic and we encourage you to contribute to future newsletters.

This month's newsletter will highlight our opinion on the business development topic: **“Value engineering in product/technology development”**

Jack Peregrim
Pres., PARAGON Development

Paragon Update

We participated last month in the CDMAEF (Commercial Development and Marketing Association Educational Foundation) Market Research Short Course. The CDMAEF approach to teaching market research is heavily weighted towards individual instruction with very experienced mentors and instructors. There were roughly 1.5 students per mentor throughout the course, and feedback from the students was very positive. This course is offered every June. It also is offered to individual organizations with customized case studies, or in conjunction with other Association's interests. The course runs for 3 intense days, and provides value to those who participate as well as to sponsoring organizations. If you would like CDMAEF to provide your company with information on sponsoring a course contact Jack Peregrim (peregrim@paragondevelopment.com) for further information.

Unlike past summers where project work was a continuation of work already in house, this summer we have been very busy with new project start-ups. We believe this is a sign of:

1. Economic recovery/expansion. Organizations are investing in new business development and are looking for the Voice-of-Market™ to gage their entry with new products.
2. The rolling out of projects that were delayed by several quarters while companies reviewed revenues (shareholder as well as private) in order to balance expenses.

We are also seeing an interest in services that are beyond the “fee for service” consulting, e.g. contingency based acquisitions and corporate venture partnering.

Technology Transfer

This section is open for clients, friends, and other newsletter recipients to spotlight technologies that they have available for licensing, acquisition, or development. Please send a description of your technology to be posted in this section for future newsletters. Inquiries can either be sent directly to those who have posted information, or, we could forward any/all inquiries to you.

This newsletter has a distribution of several thousand individuals who are primarily in new business development, so the audience is one that has the potential to generate legitimate interest. We only reserve the right to withhold posting any technology closely related to ones in which we have a client conflict.

This month's contribution is from Chuck Van Fleet at Swan Chem.

Process Technology with Improved Yields and Throughputs

Thomas Swan & Company have spent over six years developing processes for using supercritical fluids as novel solvents for organic synthesis. In 2002 the world's first multi-purpose, continuous flow manufacturing plant based upon the use of supercritical carbon dioxide was commissioned at the company's Consett (UK) site. We have significant laboratory and/or plant data on the following reactions:

- Hydrogenation
- Hydroformylation
- Freidel Crafts Alkylation
- Etherification

In all cases the application of a supercritical fluid enables very high throughputs and yields.

If you are interested in accessing our multiple laboratory units, custom manufacturing or licensing processes, please contact Chuck Van Fleet at (201) 729-1400 or Swanchem@aol.com.

Quotes of the Month

"Live as if you were to die tomorrow. Learn as if you were to live forever". *Gandhi*

"The real voyage of discovery consists not in seeking new lands, but in seeing with new eyes". *Marcel Proust*

"The only true wisdom is in knowing that you know nothing". Also translated as: "I know nothing but my own ignorance". *Socrates*

"It is not the strongest of the species that survive, not the most intelligent, but the one most responsive to change". *Charles Darwin*

"If the world were perfect, it wouldn't be". *Yogi Berra*

New Technologies

We have a client with several breakthrough technologies that they are interested in licensing. Both are at the commercial stage and their functional properties have been demonstrated. One is an anti-microbial technology and the other is in electronics/signal processing. The two technologies are:

1. Software Radio:
Enabling technology:
 - New class of RF devices developed specifically for digital control of frequency, phase, and amplitude.
 - Algorithms to create or decode RF waveforms.

- System level optimization—Architecture

Final product attributes:

- Reduces components and materials (50+%)
- Power consumption reduced (50+%)
- Increased signal processing/talk time (25%)
- Supports multiple standards without increasing hardware.
- Used to process an RF signal.
- Ultra broad bandwidth capability

2. Anti-Microbial:

Materials attributes:

- Degradable inorganic compounds—Water soluble glass (Phosphate, sodium, calcium, etc.)
- Initial materials in many forms: (fiber, wool, granules, film, powder. Can be used as an additive, carrier, etc.)
- Anti-microbial. Many anti-microbials can be used. (Silver/silver phosphate, gold, boron, zinc, copper, iron, etc.)

Processability:

- Can be processed in non-aqueous media.
- Can be applied as a coating, adhesive, etc.
- Can be extruded (fibers, etc) or injection molded.
- Can be used as an additive or filler, in master-batch or added in process.

Final Product attributes:

- Wide flexibility in customizing functional properties. (Very well controlled dissolution with release of anti-microbials) E.g. Fast release or very slow, controlled release. “Dial-in” function results.
- Allows high loading of anti-microbial if required.
- Small particles (10 microns) improve performance such as increased activity on the surface area.

These are both available for licensing into many applications. Your contact for additional information should be: Peregrim@PARAGONdevelopment.com, (203) 288-4154.

Web site additions

We are planning to upgrade our web-site in the coming months and will be adding to our alliances and partnerships page, which provides sourcing to our clients on services that they may be seeking in specialized functional or industry areas. As such we will post organizations and individuals **who we know** to excel in products and services.

If you would like to be included in this listing (free of charge), please submit a request to us with a short (50 word) description of your product and services, as well as direct contact information. We view this as a mutual service to our clients as well as companies, consultants, and other entities we have had the pleasure to work with.

Last month we told newsletter recipients about WWW.AskSnoop.Com. We received several messages from people who really loved the site and downloaded their Company web-sites to hand to their internal IT people. We take no responsibility for these actions but did chuckle at some of the responses.

We also had one complaint from an individual who said they were offended that this was included as it was “not a good reflection of something a very professional organization might be expected to highlight”. We are passing along our response as it may apply to others who felt the same way but did not contact us. “We have attempted in our newsletter to be both professional and also look at the lighter side of things. There is a time and place for each and we suffer if we ignore either”. We do apologize if anyone had been offended.

Value engineering in product/technology development

Case Examples:

Case #1:

A company was trying to commercialize an additive that would be used in polyolefins to impart certain properties. Their initial development work was with a single major customer who was considering it for a specific large volume application. The customer also insisted that it would have to have a very particular attribute to be "spec'd in". The company spent several million dollars to achieve this attribute, and, when they succeeded and contacted the customer they were told that they were no longer interested. The company unsuccessfully tried to market it elsewhere to recoup their financial investment.

What happened?

They spent a great deal of money to impart a very specific functional property. Following a value engineering evaluation it was clear that the value in use for this property was not even close to the additional 45% cost that the company incurred to add this functionality

Case #2:

A company produced a component used in mechanical devices. They found a way to add a galvanized coating to the component that added 25% in cost but increased the life by 300%. However, nobody wanted it. The component was used in a machine that had a life of 5 years and warranties for the same length of time. There was no value in adding a single part that would last for 30 years.

How could this have been avoided?

The first answer is that it may not have been avoided in either case. In both cases the companies created superior products that out-performed their competition, which very often leads to sure success.

A way that would have worked would have been to engage in a value engineering process (also called value assessment or value-in-use process). A supplier can assess the value of all aspects of their value offering and reach an optimal product for each application.

In Case #1, the company came to Paragon for a Voice-of-Market™ Forum. The consensus was clearly that the product without the enhancement and at a cost 45% less had very real market potential.

In Case #2, we surveyed a group of potential users to find out if they would purchase the component without the coating with a 15% discount. They all agreed they would. Thus, the company generated new business by reducing price by 15% while also reducing cost by 25%!

Value engineering can be applied to present products or processes to either increase share, or increase returns. For example, we worked with a client that offered, and was known for, the best technical service in their field. This technical service had always been valued and was a key part of their past success. However, the application area had matured and the same degree of technical service was no longer required. Our client's cost for technical service represented 20% of their total costs. It was clearly found that cutting the price by 8% while cutting the technical service to 8% added a great deal of new profit contribution.

The mechanics involve first an internal assessment of existing or new products, or technology so that it is clearly understood what the underlying costs are. The internal assessment breaks down the offering into cost/product value offerings. For example, the communications technology highlighted earlier in this newsletter has multiple components. It has a hard component piece, an algorithmic or program piece, and a supportive integration piece. Not all applications will require every aspect of the technology, and yet it is a great breakthrough designed to handle multiple and complex operations. Value engineering can highlight specific value propositions that may spell the difference between commercial success and commercial failure.

The same holds true for the anti-microbial technology. Products with gold are certainly going to be more costly than products with iron. They will be better in some applications such as in medical facilities but will be over-priced in others such as food processing operations that may require sheets or coatings with zinc.

After the internal assessment has been completed it is then time to test markets and customers to determine an in-use value. Doing this basically requires accessing the various users of the offering and determining their unique requirements and price elasticity for each component of the offering. This has the potential to change among various customers in the same segment.

Many try to use Voice of Customer, Voice-of-Market™, or surveys to generate an understanding of the component values. Surveys and Voice of Customer are most effective on existing products, and Voice-of-Market™ most effective with new products or those farther back in the value chain. But, one common and effective aspect involves testing a “fully loaded” product and then getting a sense for the potential for increased sales/profit by eliminating a cost while understanding the commensurate price decrease that the market would require. Thus, an additive that sells for \$1/lb has the potential to be reduced to 65¢ if it eliminated a key process. This may be a much more attractive proposition to both parties if that process was 50% of the overall initial costs.

Why isn't Value Engineering systematized into most processes? There are many reasons but the following are the most prevalent:

- The mechanics to do the assessment are not core competencies existing in most organizations and requires outside assistance -- and most external costs are scrutinized very, very closely.
- It is a difficult process to quantify, particularly when the offering is only a part of an overall final product, if there are multiple value chain steps downstream; if it is part of a complex system; or if it involves a combination tangible product and service offering.
- Value engineering just doesn't have the “cache” of other processes and isn't one of the processes embraced by certain leaders that others will follow.

Business Factoids

Lookin good.

Men may be spending more time “priming” in the bathroom these days. American men now spend \$4.0 billion annually on grooming products. That spending is up over \$1 billion since 1995!

(However, if the individuals at PARAGON Development are indicative of potential, it is pretty obvious that the \$1 billion did not come from the business consulting segment)

Productivity!

US workers productivity grew at its fastest pace in more than 50 years in 2002. Change is attributed to ongoing trends in lean staffing and significant lay-offs in many industries; leaving fewer employees to do more work. Also, the use of technology (computers, PDA's, cell phones, etc.) is also a factor in increased productivity.

Year	% change in productivity
1994	+1.3%
1995	+0.9%
1996	+2.5%
1997	+2.0%
1998	+2.6%
1999	+2.4%
2000	+2.9%
2001	+1.1%
2002	+4.7%

Nanowires

Research that shows how microscopic wires can be made to act as lasers could lead to new generations of ultra-dense data storage equipment. A group of Harvard scientists have demonstrated that a single cadmium sulphide nanowire, many times thinner than a human hair, can act as an electrically driven laser. This breakthrough could be adapted to create nanowires of different chemical compositions, potentially spanning the whole spectrum from ultraviolet light to near-infrared. If this is possible, then creation of miniature electrically driven lasers could enable lab-on-a-chip systems for medical diagnostics or in the manufacture of extremely dense data storage devices.

Quantum Leaps

More than 200 biotech products have now reached the advanced stages of clinical trials. This includes 52 anti-cancer drugs and 36 infection-fighting compounds.

Selected Views of the Future
From "The Futurist"
Published by the World Future Society

Technology Focus--predictions

The age of Nanotechnology will arrive sooner than you think. Though "nanobots" to build consumer goods and clean out clogged arteries are still far off in the future, the tools for developing nanomachines and the competitive spirit to pursue innovation are driving a much higher and increasing level of R&D funding that will accelerate achievements.

Making mountains out of molecules. Nanomanipulators that allow researchers to not only see atoms and molecules in 3-D, but also move them around could one day be used to build jet aircraft with only a fifth of it's current weight; create temperature-controlling fabrics; and develop drugs that detect and kill cancer cells before they do any harm.

The future of light is solid state. Cheaper, more efficient light will come from light-emitting diodes; the same technologies used to illuminate taillights, traffic lights, outdoor displays, and other devices. Solid state light, which is 10 times more efficient than incandescent bulbs and would reduce electricity consumption worldwide by more than 50%, will eventually become the light-source of choice.

Despite attempts to ban them, the technologies for "designing" children will be developed. According to medical-technology analyst Gregory Stock, regulatory efforts are not only futile but are also potentially harmful as they inhibit research that could cure or prevent diseases and disabilities. Also, the transfer of technology is too easily accomplished to have individual governments provide the regulatory impact they once did.

Extraterrestrial questions will soon be answered. Within the next 50 years, astronomers will resolve the question of whether there are Earthlike planets circling Sun-like stars, and hence whether intelligent life beyond our planet and solar system is possible.

We hope you learned something from this and/or stimulated an action that leads to new opportunities for you and your organizations.

Our best wishes for a successful and prosperous conclusion to 2003.

Previous issues of our newsletters can be found at www.paragondevelopment.com/resources.html.

Your friends at:

PARAGON Development
WWW.paragondevelopment.com