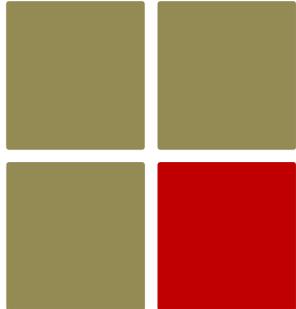


Road Mapping

“We’ve arranged a civilization in which most crucial elements profoundly depend on science and technology” –Carl Sagan



Technology for technology’s sake does not increase a company’s bottom line—nor does developing that technology in a vacuum. It is imperative to have a robust roadmap that considers not only the customer’s needs, both spoken and unspoken, but one that also identifies market and technology trends that are shaping the space where technology will reside.



Most companies are lacking this comprehensive roadmap. In fact, when we interviewed over 150 innovation professionals about their innovation challenges, we consistently heard, “We don’t know what we don’t know”. When we asked whether they had technology road mapping which would help them predict the future, most companies said they had one. However, when we asked them what



the gaps were in their road mapping process most companies said – “It is too incremental,” and, “It is too short-term focused.” When we peeled back the onion, we found the following challenges with road mapping:



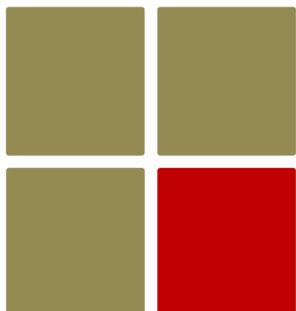
*The roadmap is driven by multi-generational product mapping and asset mapping, thereby, only addressing the needs of the existing customers and technology platforms.

*The roadmap addresses opportunities that are two years out, thereby, resulting in a very incremental portfolio and not taking into account megatrends.

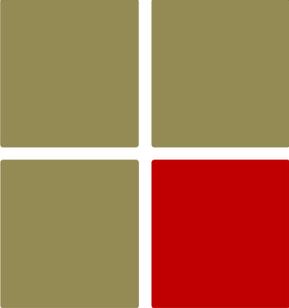
*The roadmap is created in isolation with limited outside input, thereby, missing disruptions and emerging technology.

Does this sound familiar?

Are you comfortable that you have a roadmap that can lead you into the future? Or are most of your projects dealing with today’s problems instead of tomorrow’s challenges?



Our Service



ITECS has developed an approach to creating a robust roadmap –one that will identify and evaluate trends in the market to uncover possible disruptions that could upset the apple cart –or illuminate opportunities that were not initially considered. We enhance your innovation roadmap by completing a comprehensive evaluation of the emerging landscape in the space where your technology will reside, including mega trends, macro trends, and emerging technologies. From this analysis we can identify potential problems that need to be solved. Once these problems are identified, we work with the client to understand the best path forward, be it internal development, leveraging outside partnerships or simply making an acquisition.

Our Tools



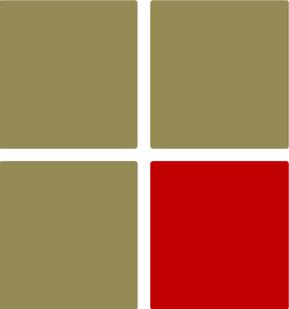
At ITECS, we approach the challenge of providing a robust roadmap by using tools we developed to surmount these innovation challenges –a bottom up approach where we consider the client’s existing customers and asset base, and a top down approach where we look at emerging markets and technology trends to inform the road map about the possible disruptions and hidden opportunities.

For example, a chemicals company wanted to know which chemicals they could use in the energy market. We interviewed both their customers and their internal people to understand the existing needs. The bottom up approach yielded a variety of opportunities that the client could pursue. However, when we employed our top down approach, mapping out the entire space, using both our databases (proprietary and commercial) we discovered that fracking was opening potential opportunities, particularly in cold weather climates. We expanded our understanding of this potential opportunity by interviewing both technical and marketing experts where we learned that there was an unmet need in this market around coatings on proppants. Through applying our tools and processes, we were able to uncover not only a new application for our client’s technology, but we open the whole new world of fracking to them.

How We Work Together



There are four steps to the road mapping process. The first step is to perform a landscape analysis, which consists of conducting market research to see what is happening in the technical world, as well as leveraging our database to uncover disruptive and emerging technology and trends. We then interview internal experts at the client to gain an understanding of the client’s view of the marketplace, in addition to gaining an understanding of the strengths and weaknesses of the client and what is possible to implement.



Our next step consists of an external analysis. During this step we perform interviews of the suppliers and customers of the client, as well as interviews of external thought leaders who are experts in the field of interest. Through these interviews, we get a deep understanding of the unmet needs and the problems that need to be solved. We also peel back the onion on the emerging trends and technologies a little more in this stage, allowing us to identify information that could provide opportunities or help avoid or take advantage of disruptions.



The third step in the process is an opportunity analysis. In this step we review the client's strengths and weaknesses. We identify each opportunity that they could potentially solve. We then list the pros and cons of pursuing each opportunity. We give a rating to each of the opportunities by evaluating its importance to the industry, the ability of our client to influence, the cost and timeline to implement and the potential competitive situation. We then qualify the opportunities by interviewing experts who can provide feedback and concept testing. Once we have a firm set of opportunities thus qualified, we perform a SWOT analysis on each opportunity to weigh the pros and cons.

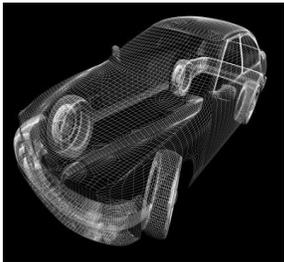
Lastly, we develop the roadmap, which offers short, medium and long term projects. At this point, we make recommendations that formulate the next steps for the client, including additional projects and assessments that might be useful.

Case Studies



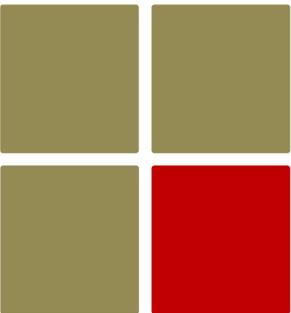
Expanding Globally—A major lubricants company felt that their technical programs were only arising from their sales force input, resulting in opportunities that were not bearing enough fruit. They felt they were always behind the eight ball because they were following the market, not leading the market. To break this stalled pattern, they came to us for help in exploring the power generation market as a possible area of interest for their technology. We interviewed their entire value chain and their internal people to understand their current situation. We also used a top down approach, looking at mega trends, macro trends and emerging technologies in the power generation market, followed up with interviews with thought leaders in the space.

Through applying our tools and processes, we were able to identify five areas that could help them invigorate their technical programs –presented to them as short, medium or long term opportunities. We provided them with a well thought out roadmap that helped point them in the right direction, resulting in their ability to expand globally into new applications for their technologies.



Automotive Lightweighting – A large materials company came to us to help them define the thermoset market in North America and Europe, especially as it applies to lightweighting transportation. To meet this challenge, we identified the value chain in both continents, along with the key players along the value chain. This was followed by validating the analysis through interviewing the stakeholders. The next step entailed defining the process steps, from raw materials through to the assembled vehicle, after which we performed a techno economic analysis on several applications. Through this process, we identified the driving factors throughout the value chain and developed a new approach to the market space.

Our efforts provided the client with a comprehensive view of the industry structure, and how decisions were made in this space and provided a clear picture of the drivers and trends, as well as illustrated the competitive environment between steel, thermoplastics and thermosets, showing where there were good indications of where there would be future growth. In addition to identifying barriers that exist in the development of thermosets, we provided the client with a sound strategic path forward. We provided a roadmap that had short, medium and long term opportunities for our client to pursue.



Recasting an NSF Center – The ERC Center, consisting of seven universities, received \$25 million in funding for five years – they were coming to the end of their funding. ITECS was chartered to do a portfolio review and determine whether a center focused on hydraulics and pneumatics could be sustainable. They interviewed key stakeholders for the Center, assessed the existing projects and identified core competencies, identified potential sources for funding, spoke with NSF and industry experts, and identified the advantages and disadvantage of the center.

ITECS developed three different scenarios for maintaining the center. We developed a SWOT for each scenario.

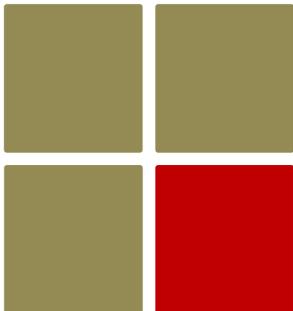
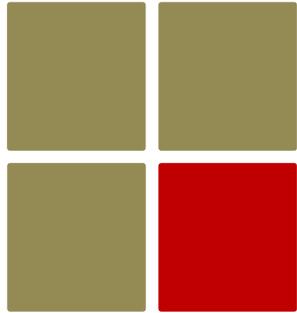
Finding New Markets for a Commodity Material – A materials company wanted ITECS to review its portfolio and find potentially new growth opportunities. ITECS found that 95% of their portfolio was incremental in nature and they were not evaluating any adjacent markets. An intellectual property review was completed to evaluate markets for applications with biodegradable resins, powder coatings, greases/lubricants, micro porous films, epoxies, and surface treatments.

ITECS did a business assessment on all of the opportunities. We predicted the size of market, rate of growth, and the drivers for each opportunity. The competitive landscape was also assessed, a value proposition was developed and a path to market was identified.

Assessing the Landscape for Type 2 Diabetes – ITECS worked with a major drug company to identify the thought leaders involved in establishing legislation for Type 2 Diabetes care. ITECS was able to identify potential partners and programs in which the drug company should be involved

New Markets for Encapsulation – ITECS helped an Adhesives company find new markets for their liquid polymer encapsulation technology. The company had the technology developed, but wanted validation of the competitive landscape where their technology would best flourish. To provide a solid picture of what markets should be considered, we contacted appropriate channel partners in several areas of interest, performed secondary research to ascertain the strengths/weaknesses of the various markets, and identified and evaluated the trends in these markets. Once we identified and qualified the new markets, the next step was finding partners with advanced capabilities to further develop the technology. To that end, we sifted through various partnership possibilities, winnowed out the best for their purposes, and introduced them to a potential new partner.

Our client received an Industry Dynamics Study, which provided a thorough analysis of potential new markets, delineating the strengths and weaknesses of the various possibilities for their technology. In addition, we introduced our client to an appropriate partner with the advanced expertise to help them successfully enter into the new market.



Who We Are

ITECS can help you get over the hurdle of taking technology from research into product development. We are solution seekers that can help you find technology, partners, funding, opportunities and assisting in developing and implementing an innovation roadmap.

What We Do

Our services include:

- Road mapping
- Open Innovation Help Desk
- Leveraging the Public Sector
- Benchmarking

We can be the best resource to deliver on your growth agenda—providing deep experience and expertise and resources to help make the venture roll smoothly, and an external perspective of which path is most appropriate for successful technology development.



Our Tools

We are organized for success. We have a core group of technology and new business executives that are great solution seekers. They will understand your needs and bring in a variety of tools and resources to find the best solution. The tools we leverage are:

- Targeted process to find solutions
- Commercial and proprietary databases to map the landscape
- Technical and marketing subject matter experts from academia, industry, and the public sector
- Top down approach allowing us to identify emerging trends and technologies
- Understand how to leverage the public sector
- A proprietary review process

Why We Do It Best

Our people are the best in the industry because they:

- Have backgrounds in R&D and understand the barriers to Innovation. We don't care much for barriers.
- Know the marketplace and the technology—we can fashion a winning strategy for success
- Facilitate hundreds of industry, government and academia collaborations—we build innovation ecosystems.
- Support a client base of F500 companies in every industry vertical; our clients are responsible for over \$700B in combined revenue.
- Have access to a broad range of decision makers in the commercial sector, the government agencies and in universities.
- Customize our services to best fill our Client's needs and culture. We become part of the team.
- Roll up our sleeves and work the nitty-gritty, from negotiating deals to writing powerful proposals.
- Turbo charge the commercialization process by finding technology, partners, funding and developing the business case.

We love what we do—we love to be part of moving technology forward, where it can create solutions to make all our lives better. Let us put the ITECS to work for you. One meeting is all that is needed to determine whether there is a match between your growth objectives and the value that the ITECS network, expertise and resources can provide.

For more information, contact Barbara Felton, at 404-376-8192, or bfelton@itecs-innovative.com