

**White Paper:**  
**Getting Technology to Product Faster using Technology Roadmapping**  
A Rapid Design to Facilitate Commercialization

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## ***Tech Start-ups in Need***

Speed to strategy, speed to money, speed to commercialization and speed to revenue are all critical to the survival of a tech company. Layered on that is the difficulty of communicating a typically complex strategy and the need for funding, further complicating the race against the clock.

## ***Money Flows into Tech***

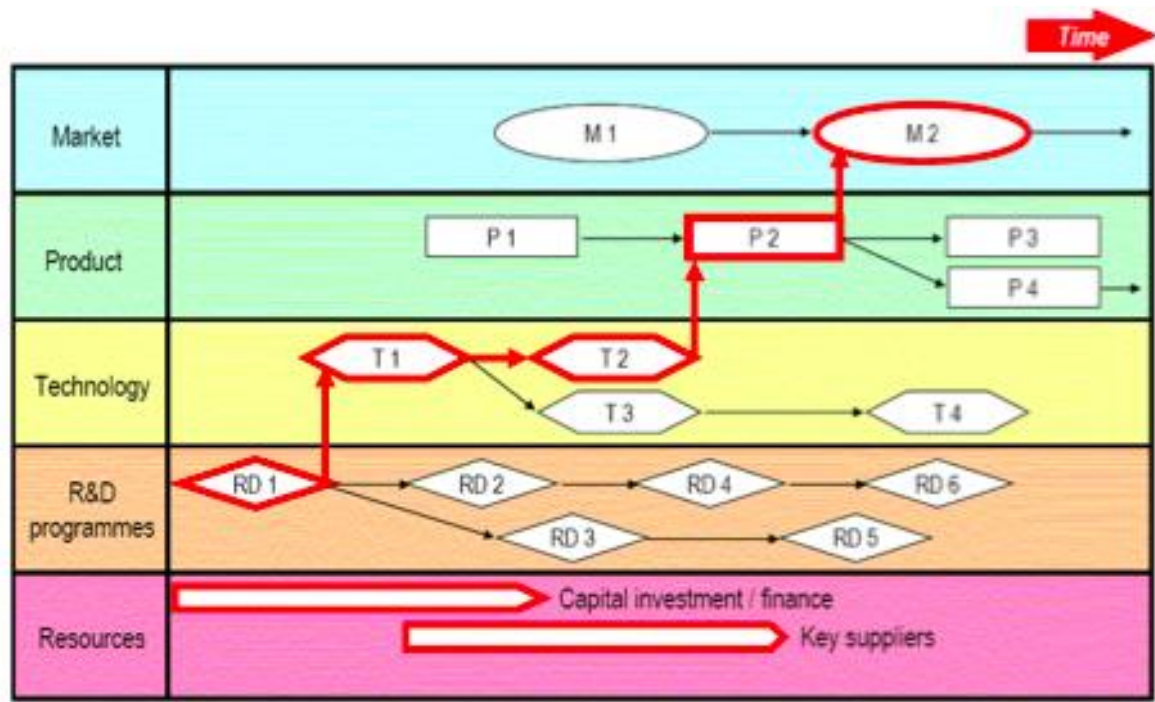
In 2002 Michigan Small Business Development Center decided to set a focus on tech – and even renamed itself for a decade as the Michigan Small Business *Technology* Development Center. They used an SBA FAST Grant to fund its initial development. They hired 4 people with private sector tech commercialization backgrounds to counsel new tech start-ups. I was fortunate to have been an early member of the team. After two years the state's legislature decided to deploy \$1 Billion of its tobacco settlement funds into technology development and the SBTDC was one of the recipients of grant funding to support what is now called the "Tech Team."

What we found is that each of us brought a specialty (marketing, finance, sales, legal, etc.) and were also required to be generalists in advising an early company through commercialization as they were guided through developing a strategy, business model, funding plan, marketing plan – you name it. We spent a significant amount of time driving between "clients" (the state's early technology companies) and passing companies back and forth depending on their needs., keeping copious notes in a database. It was somewhat effective but very inefficient.

In 2004 we were able to make some additional key hires, one of the most critical was Dave Grossman. Dave was the retired head of global technology development for General Motors and was looking for a way to keep busy and give back to the community. At GM, one of Dave's responsibilities was building technology roadmaps and he thought he could apply that knowledge to early stage tech companies. The difference was, at GM a tech roadmap could take two years to build, and start-ups could easily be dead in two years.

Over the next few years Dave worked with us to learn more about early stage tech companies and how they build and grow, as he mentored us on the art of tech roadmapping. He started with the Cambridge Model (ref to book), used some basic software tools, and created templates.

## ***Technology Roadmap Format***



Source: Phaai, 2004

Dave also tweaked his process so that in a maximum of four 4-hour sessions a living document, or “technology roadmap” could be produced that would communicate a path to commercialization.

## ***Nuts and Bolts***

Dave’s background was auto manufacturing of course, but combined we worked in many other industries. And it was amazing how this process developed initially for manufacturing ended up serving hundreds of software, biotech, agro-tech, materials, and more companies over the past 12 years.

The two skillsets on the facilitation side that were needed to complete almost every roadmap were expertise in marketing and finance. In early tech, those two backgrounds were almost always missing in the company. There were typically 3 members of the Tech Team to help facilitate. One to “drive” the facilitation and two to support the discussion, using their expertise to address critical issues.

1) We started with a business plan template using mindmapping software. It offered the flexibility needed and – as Dave likes to put it – when a mindmap is displayed on a wall for discussion it allows the human mind to process 100 different data points for decision making, rather than the typical 4 to 6 data points we are capable of without visual aid. Also, another Daveism is that it made it possible to put together the elements of a business plan and strategy without the “word salad” of a written business plan. It also helped identify knowledge gaps that needed to be addressed along the way. Almost every client who went through this process ended up purchasing mindmap software.

2) The next session was a market/technology fit assessment. Using a custom Excel spreadsheet and a scoring format, we walked the company through matching product features

with target markets. This helped us identify not only best market fits, but also areas of focus on product features and those that weren't necessary.

3) By the third strategy session, the principals in the company are starting to gain a better understanding of the company's needs and shortfalls. Also using an Excel format, the facilitators walk the company through market analysis comparing its own business drivers and matching them with markets that are the best fit – such as markets that make decisions quickly, making them a priority to target for revenue.

4) The fourth and final session is putting together the technology roadmap. Rather than working through this in an electronic format and displaying it on the wall as with the other three sessions (which we tried), this session is more effective using a whiteboard and post-it notes. That allows multiple people to engage in the discussion, place their own critical element on the board, and visually work through a timeline of product development. The energy level is usually very high for this session, as the company team members get excited to see their preparatory work from the other sessions put to use. It is exciting and fulfilling to see a completed technology roadmap – although no roadmap is ever really “done.”

## ***Key Learnings***

- An introduction to the process that shows where the roadmapping session is heading and why was important. In the first year we started by identifying whether the company was a “Technology Pull” or a Technology Push” - meaning whether there was a customer asking for a solution, (pull) or a solution looking for a customer (push). Ninety-nine percent were technology push. So we now skip that step.
- It was very difficult to conduct a roadmap with a “team of one.” AT LEAST two people are needed to represent the company and one of them MUST be the CEO. Buy-in from key team members is critical and will not happen if they aren't participating in the strategy development. It also follows that in order to create a good roadmap, there should be freedom to address inherent problems, as well as not have one person dominate the conversation. Occasionally a funder would join the discussion – depends on the comfort level of the team.
- Sometimes a company doesn't get through all four sessions, it only takes one or two – and that's fine. Sometimes a company will decide to shutter because the product or market don't render itself to a fundable strategy...also fine.
- Engineers and scientists love the process because it uses a quantified decision process. Marketing decisions are made based on solid logic in a structured decision.
- Four hours is about the maximum amount of time a group can think hard and remain engaged. The time spent between sessions thinking and reviewing was also important. Recall that there are “knowledge gaps” that are identified in the process – most of the time around some details in customer discovery. Serious companies will be productive between sessions.
- Companies can use the one-page technology roadmap to secure funding and strategy partners.

- Four roadmap sessions eventually replaced what used to be at least six months of a work. And it made it easier to counsel a company that had a strategy and vision – even though the roadmap could change over time.

## *Summary*

Technology Roadmapping is one of the single most effective tools used in Michigan to help companies strategically plan out their development, business model, funding strategy, and market launch. High labor requirements and scheduling are the toughest barriers with this approach.

Nothing replaces the experience and expertise in the room. Like any good tool, it is only as good as the mechanic working it, but facilitating technology roadmapping is a skillset that can be developed over time. To date, the technology roadmap process has been used with more than XXX Michigan early stage technology companies. The SBDC Tech Team (now 8 members) helps early stage tech companies raise more than \$60 Million each year.

About Paula

About Dave