

It is a rare startup that picks the right path, and then executes flawlessly. Of course sometimes external events mean the path needs to change. But all too often, key value milestones are attacked in the wrong order, or neglected all together. Because this seems so prevalent, we have created the graphics below — snapshots in time of the development of a new venture — to help illustrate this discussion.

On the two axes are specific value creating milestones: both *technical*, and *commercial*. The amount of value created is represented by the size of the colored rectangles joining the completed milestones.

The example of figure 1(a), in which progress has been made primarily along the technical axis, is one which we see all too commonly. Just think how many startups and advanced development groups have technical development teams of tens of engineers, but at best a single individual tasked with making progress along the commercial axis.

There are two problems with this unbalanced approach. First, as seen in figure 1(b), the venture's value is far greater after it has accomplished the *commercial* value-creating milestones *as well as* the technical milestones.

So the company shown in figure 1(a) has an opportunity to create a substantial amount of value by attacking and completing the value-creating milestones on the *commercial axis* — morphing as a result into the company of figure 1(b). This can usually be done relatively quickly (compared to making technical progress), and with a very attractive Return on Investment.

It seems a shame to leave that extra value on the table when it comes time for the next financing.

The overemphasis on technical milestones of figure 1(a) also leads to a second, more significant source of *value destruction*. Because of the way the technical and commercial milestones interrelate, when the company of figure 1(a) gets around to attacking the milestones on the commercial axis, it will often find that some of its prior technical work has been misdirected.

For example, often the product needs to change if it is really to meet the customers' needs better than potential

competitors. Or things that were neglected early on, such as thinking about how to create sustainable long term competitive advantage, dictate time consuming and expensive course corrections.

We recommend an iterative approach to value creation — a little progress along the technical axis, a little progress along the commercial axis, then more along the technical axis, then more along the commercial axis, and so on. We describe this as *Balanced Execution*.

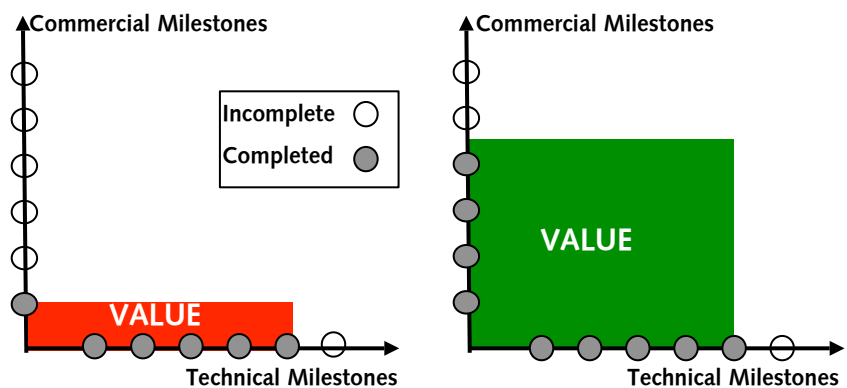


Figure 1a: Neglecting commercial progress Figure 1b: Balanced progress

This approach to value creation ensures that, at any point in time, the company has come close to maximizing the value of what it has created with the time and capital invested thus far. It also helps avoid misdirected effort, and the need to go back and redo work. This is particularly important, because at best this waste of time and effort means investors need to invest more capital and entrepreneurs need to invest more time. At worst, it can lead to death of the venture if more capital is not forthcoming.

Technical value milestones are things such as:

Complete proof of principle experiments; Develop first prototype; Test in realistic situations; and Scale up for manufacture.

Commercial value milestones involve questions such as:

- Which of several possible products enabled by my technology will be the best starting point for a sustainable long term business?
- What are my competitors developing now to hit the market in x years when my product is ready?
- What is my sustainable competitive advantage?
- What are the unmet customer needs I am addressing?
- Why will my technology enable a product that meets those needs better than competing solutions?
- For which layer of the food chain should I develop my products?
- What type of acquisitions will be most valuable to the industry giants 5 years from now?

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Since 2004, Dr. Richard G. Caro has been CEO and founder of **TangibleFuture, Inc.**, where he helps managers and entrepreneurs create and grow businesses based on innovative science and technology.

Prior to founding TangibleFuture, Inc., Richard was Managing Director at **RHK**, a provider of advisory services to the communications industry, where he led consulting engagements with multinational businesses such as **Intel**, and **Carl Zeiss**; research institutions such as **Battelle**, and **Sarnoff Corporation**; and a variety of as-yet-unknown, emerging startup companies.

From 1986 to 1999 Richard held operational roles in high tech companies in Silicon Valley and Boston. He was CEO (founder) of **Vital Insite**, a venture-backed, medical device start-up, developing noninvasive monitoring products; Engineering Program Manager at **Coherent**, one of the world's largest laser manufacturers; and CTO (employee #5) of **Summit Technology**, a pioneer in the laser refractive surgery (LASIK) business. Before entering industry, he was a member of the research staff at **Stanford University**.

Richard has been responsible for the development of a number of successful products, and has 23 issued patents. In addition to his work with TangibleFuture, Inc., he is an occasional angel investor, and has a keen interest in the education of science and technology entrepreneurs — speaking regularly, around the world, on topics relating to *turning science into profitable businesses*.

Born and raised in Australia, Richard received a B.Sc. (Hons.) degree from **Melbourne University**, Australia (1977), and a D.Phil. in experimental physics from **Oxford University** (1982) — where he was a **Rhodes Scholar**. In 1982 he was awarded an **IBM** post-doctoral fellowship to work at **Stanford University**, and migrated to the USA where he has lived ever since.

Introduction to TangibleFuture, Inc.

The TangibleFuture® blend of analysis, advice, & hands-on intervention helps managers & entrepreneurs accelerate growth; increase value; and avoid costly missteps — as they create and grow businesses based on innovative science & technology.

We work with startups; large, established companies; and research organizations — in North America, Europe, and the Asia-Pacific region. Many of our clients are focused on growth: through new products, new markets, new business initiatives, or through acquisitions.

Much of our work is in markets and industries in which things are changing rapidly, or new disruptive technologies are emerging and creating turmoil. Recent engagements have been in fields such as *life sciences, communications, cleantech, homeland security, and various applications of photonics & small-tech*.

Clients seek our help with challenges like how to *increase enterprise value faster*; how to *improve the ROI of growth initiatives*; or how to *improve the success probability for a new venture, growth initiative, or M&A initiative*.

Our effectiveness derives from an uncommon blend of skills, experience and knowledge:

- senior management experience in high technology businesses: *we know what it's like to be in our client's shoes, and what it takes to succeed*;
- a track record of successful consulting engagements with clients ranging from startups to large multinational companies: *we know how to provide effective help*;
- expertise in both technology and market analysis: *we know how to find out what customers will need several years in the future, and understand what a technology could be capable of by then*; and
- deep industry expertise and a global perspective: *we know already a great deal about the industries in which we specialize, and the activities of their key participants in North America, Europe and Asia*.