



The KeyStone Compact™

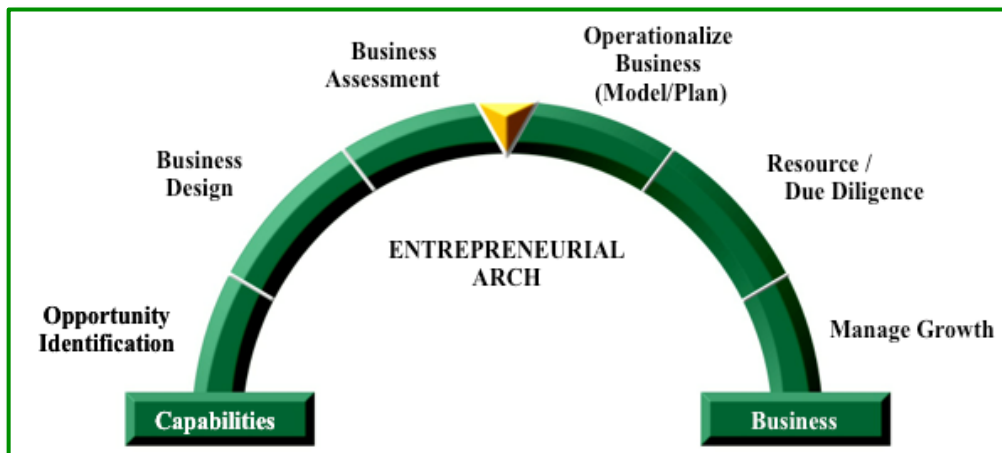
'A Capability-Driven Business Assessment, Growth, and Acquisition Tool'

SUMMARY

The KeyStone Compact™ takes both a market and an industry view through the lens of your organization's capabilities. The methodology builds a growth strategy for your firm by sequencing capability adjacencies. The process provides a rigorous, data-driven methodology for screening (via the KeyStone Score™), assessing, and/or strategically repositioning innovative ventures to maximize their value-capture potential. The method allows for the identification of the critical success drivers of early-stage ventures and corporate innovations, and for improved insights in the valuation of pre-IPO and acquisition targets.

BACKGROUND

The KeyStone Compact™ is the result from studying hundreds of startups in a wide range of technology spaces, ranging from space science to geology, from biotech to CleanTech, and from ICT to social networks since 2002 at The University of Michigan. Based on these



startups, as well as interacting with hundreds of successful CEO or CTO level entrepreneurs and venture investors, we have codified tacit knowledge relevant to positioning and value capturing in the KeyStone Compact™. This tacit knowledge is organized across an

Entrepreneurial Arch, which captures the entire business lifecycle from opportunity identification to growth management. The method's approach firmly grounded in developing, acquiring and growing the firm's capabilities in the context of its value chain position in the initial target industry where it seeks to innovate, and its growth strategy in new markets.

The capability view of the firm drives the following tools and analyses that encompass the KeyStone Compact™:

1. Separating industry and market segment analysis to identify high-growth opportunities
2. Invest-ability of capabilities that help the firm position for value capture
3. Company growth through investing in sequential capability adjacencies



APPROACH

Following the mantra that *'if you can't measure it, you can't manage or fix it'*, the KeyStone Compact™ is data-driven along the following four phases: 1. Opportunity identification and positioning for value capture; 2. Business design and business model iterations; 3. Feasibility and investability analysis; 4. Identification of growth and capability adjacencies. The key three questions that are addressed are:

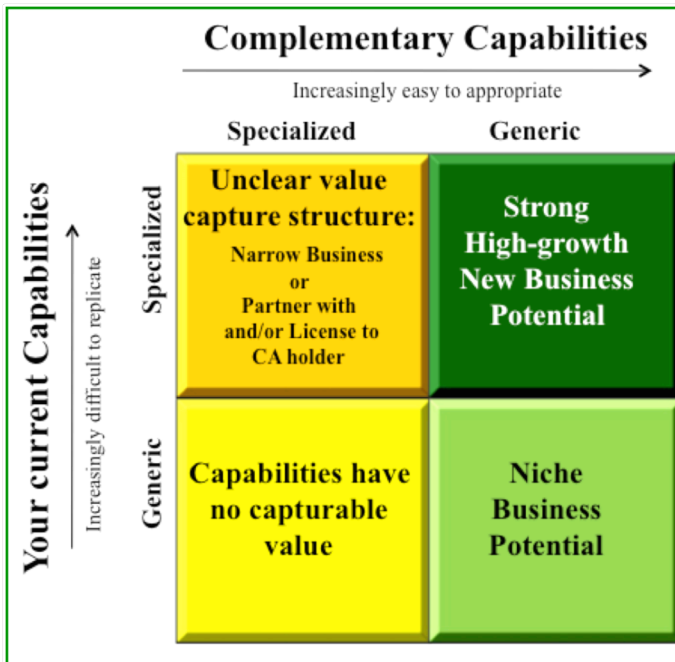
- Does the firm (or the technology that enables it) target a high value opportunity?***
- Is the firm (or the technology that enables it) positioned for value capture?***
- Is the venture or firm an attractive investment to build and extract this value?***

The KeyStone Compact™ tools allow for scoring of the companies, using the KeyStone Score™, which bins the firms in the four quadrants of the PVC screen and the Investability screen.

A. Positioning for value capture (PVC)

This screen focuses on whether the technology-enabled venture or company has a chance of capturing value from its differentiation. Using either a screening level analysis or an in-depth assessment, PVC focuses on mapping out the 'replicability of the firm's capabilities' against the 'ease of acquisition of complementary capabilities'. Key is that the current capabilities are not only assessed individually, but as an integrated nexus, and that the complementary capabilities focus around control of the assets/needs required to create and deliver product to market.

The data and information that are collected to make this determination include:



1. The nexus of assets, skills, networks, passions in the industry where the venture wants to innovate;
2. Value system (material supply chain, information, and financial) analysis in the industry (or across industries, if relevant);
3. Technology/process/business model differentiation in relevant value chain segment;
4. Commoditization/competition in value chain segment (bargaining power for margins)
5. Product scalability - license vs service vs product sales (market opportunity);
6. Partnerships for key complementary assets (commercialization or growth path);
7. Technology vs market risk (degree of validation in the market)



Based on this assessment, companies are divided into four categories, represented as PVC quadrants: no capturable value, niche business, unclear value capture, and strong new business potential.

High Growth New Business Potential. Organizations in this quadrant have specialized, differentiated capabilities and, in turn, only need generic complimentary capabilities that are easy to appropriate. These firms have the potential to grow through developing capability adjacencies into other market segments.

Unclear Value Capture. Firms with specialized assets, particularly intellectual assets (e.g. product development firms), often find themselves in the upper left-hand quadrant of the PVC framework as they typically also need specialized complementary capabilities. Their challenge is to go forward with a licensing, partnering or repositioning strategy.

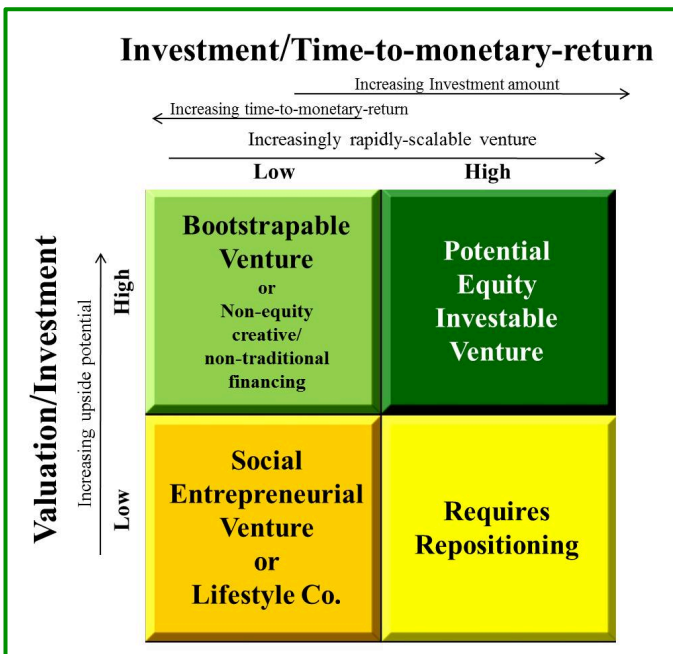
Niche Business Potential. A firm in this quadrant has generic capabilities but needs only generic complementary capabilities to enable its business operations. The main protection of your business in this quadrant is being small, but niche businesses have strategic potential to grow into high growth or strong partnership firms.

No Capturable Value. In this case, the firm has generic capabilities and needs highly-specialized complementary capabilities in order to produce its offering and deliver it to the customer. Many firms start here and need to prioritize investments to either evolve into a niche, product development or other firm, as indicated earlier.

The initial KeyStone Score™ (see separate brief) is used to screen companies or technology-enabled ventures for further investability analysis. Typically, we will retain companies in the top two quadrants.

B. Investability analysis

This screen focuses on whether these ventures can attract capital (based on IRR metrics),



and whether equity or alternative investment vehicles are required to build this company. Either using screening level or in depth analysis, the 'upside potential' to 'time to scale' space is mapped, resulting in four quadrants: social or lifestyle venture, not investable (requiring repositioning), bootstrap-able or non-equity financing, and potential equity finance. Of importance in this map is the valuation-over-investment ratio, and the investment-over-time ratio, which determines capital required and time frames over which this investment is needed.

Data and information required for this assessment include:



1. Investment and time horizon required to de-risk and grow the company. These estimates are based on 25 years of experience in university and industry technology R&D, technology disclosure, patent and license expertise, and industry metrics.
2. Margin distribution estimates and dynamics in current or emerging value systems. Often this involves a triaging exercise, because of merging value systems, and shifts in the value segmentation that may have occurred.
3. EBITDA multiple value estimation for venture/license value added for target industries. We have developed proprietary revenue estimation projection models based on technology/process adoption rates in the sectors where innovations take place.
4. Valuation at industry-relevant “exit” (acquisition, IPO, asset sale, etc.), both based on prior exits, P/E ratios, and built from the ground up using investment round and share price assumptions.
5. Enterprise Value: EBITDA ratios for proxy companies in same value chain segment or with similar business models
6. Investor IRR or multiple expectations (equity, debt, other), based on US, Asian, or European markets.

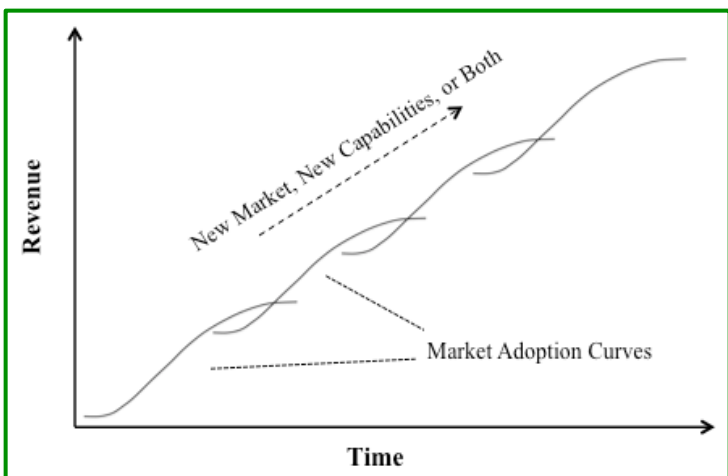
This information is analyzed using a proprietary financial model to develop the scale and projections for value capture, and investment required. Analysis of equity investment is conducted from the perspective that every company could be a ‘winner’, but sensitivity analysis is employed to bound the opportunity.

Only companies in the top two quadrants are generally retained for full business design and assessment, though social ventures are considered as well. Companies in the lower two quadrants of either diagram can be repositioned and structured (‘getting to plan B’), using bottom up data acquisition and analysis.

CORPORATE GROWTH

We look at corporate growth through the lens of capabilities. We investigate the pathways

for corporate growth through what we call capability adjacencies, versus the more traditional view of exploring market adjacencies. Capability adjacencies may be in markets and industries that the firm is currently not participating, but can be broached by the expansion of the current corporate capability set. That capability expansion can be accomplished via organic growth or via acquisition. If through acquisition, we can identify and assess the appropriate targets for your firm.





METHOD VALIDATION

We have applied the domain-agnostic KeyStone Compact™ to over 450 later stage CleanTech companies (global), a few hundred early stage firms across investment domains (predominately US), and countless startups (predominantly Michigan). The method is used by the Global CleanTech Cluster Association for its later stage CleanTech company screening, by investment funds (Watershed Capital Group; Wolverine Fund), and under consideration for technology licensing and business development by government agencies. The top 10 GCCA firms that survived the screen ended up raising over \$300 MM. in investments. In addition, the method predicted the shift from asset-intensive to service-based business models in the CleanTech space, and has been validated on high visibility troubled investments such as Konarka, Miasole, A123 Systems and Solyndra.

CONTACT

Dr. Peter Adriaens
Adriaens@CTA-Partners.com
<http://cta-partners.com/index.php>
www.linkedin.com/in/peteradriaens/

Dr. Timothy Faley
Faley@CTA-Partners.com
<http://cta-partners.com/index.php>
www.linkedin.com/in/timfaley