



# SHOULD I TAKE MY BUSINESS GLOBAL?

A SIMPLE TEST FOR SMALL AND MEDIUM ENTERPRISES

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# Developing Your Company's Competitive Advantage Through Global Strategy

For a small or medium-sized business looking to expand their company, trading overseas may be the best path to success.

## ABOUT THE RESEARCH

DHL Express commissioned Dr. Donald R. Lessard of MIT to examine the internationalization potential of three small to medium-size companies that are interested in expanding their business to the international marketplace. Professor Lessard analyzed statements and interviewed senior executives and managers of each company.

OF THE MORE THAN 300,000 U.S. companies involved in international trade each year, approximately 98 percent are small or medium-sized businesses with less than 500 employees. Today, these enterprises are responsible for more than 30 percent of the goods exported from the United States. Clearly, international trade is proving to be a growth opportunity for businesses across the U.S.

As global logistics and ever-present broadband communications continue to grow, small and medium-sized businesses (SMEs) are finding the opportunities to reach international markets much easier and in many cases, without the need to develop a significant local presence in the countries they are exporting to.

Although international trade represents an attractive growth opportunity for SMEs, many small and medium enterprises still have concerns about the challenges and barriers surrounding cross-border trade.

Whether importing or exporting, one of the first things a small business should do is research potential markets and become familiar with the regulatory requirements and rules of each market – as these can vary significantly from one country to the next. These laws will not only be governed by geography, but will also be specific to the type of products being shipped.

In order to increase the odds of success in new international markets and be successful abroad, a firm's immediate value proposition must be underpinned by a set of capabilities that are **RELEVANT, APPROPRIABLE, and TRANSFERABLE** – a simple "RAT Test".

In the Case Studies section (pages 4 and 5), three small and medium enterprises driven by innovation are explored. A RAT Test is applied to these companies to determine if they have the potential to be successful in international markets, even if it is on a relatively small scale.



## Should I Take My Business Global? A Simple Test For Small And Medium Enterprises

With time-definite, international logistic solutions and ever-present broadband communication, small and medium-sized businesses can reach international markets much more easily than in the past; in many cases without having to develop a significant local footprint. However, this does not mean that every business should seek to be an exporter, a foreign local producer or that all potential international markets should be viewed as equal.

In order to be successful abroad, a firm's products or services must be competitive in the specific foreign market, delivering a superior value proposition in terms of what the customer is willing to pay relative to the delivered cost. This is a "necessary" condition but not a "sufficient" condition for long-term success. The immediate value proposition must be underpinned by a set of capabilities, which could be defined as aspects of a company's existing products, services or business model. These capabilities could also be a product's design, a transformative service standard or practice, a product's cultural affinity, a product or service that is difficult to reproduce, or simply a demand for business replication of a home country's resource. In turn, these capabilities are valuable, rare, hard to imitate and cannot be easily matched by others<sup>1</sup>. Otherwise, by exporting, the U.S. firm will simply be doing market development for a local firm or an international firm with an even lower cost base.

### Understanding the RAT Test

Understanding what these unique capabilities are and whether they can "travel" to other markets is the key to global success. Once the firm "understands itself", it then should apply the RAT test to capabilities that underlie its products and/or services to determine if they will "travel"<sup>2</sup>:

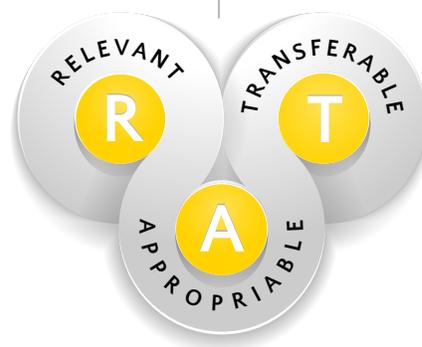
- R** Are the capabilities developed in the home market **RELEVANT** in the target market to create value by increasing customers' willingness to pay and/or allowing the firm to deliver the product/service at a lower cost than local or other international competitors?
- A** If deployed in a foreign target market through exporting or for local production, would these capabilities be **APPROPRIABLE**? In other words, do they allow for the capture of the value they create? Are there sufficient barriers to imitation and innovation that prevent competitors from matching the capabilities or finding alternative solutions? Are the necessary value chain partners present and without undue market power?
- T** Are these capabilities **TRANSFERABLE**? Can the company deploy its capabilities effectively in the target foreign location without requiring a local footprint that costs so much that it destroys the potential value?

<sup>1</sup>See for example, Barney, J. and E. Clark (2007). Resource-Based Theory: Creating and Sustaining Competitive Advantage, Oxford University Press and Prahalad, C. and G. Hamel (1990). "The Core Competence of the Corporation." Harvard Business Review.

<sup>2</sup>For more on the RAT test (and the associated CAT test) see Lessard, Lucea, and Vives. "Building Your Company's Capabilities Through Global Expansion," Sloan Management Review, Winter 2013 <http://sloanreview.mit.edu/x/54202>

#### EXPLOITING CAPABILITIES

A company can determine whether its existing capabilities will "travel" by applying the RAT test: Are they **RELEVANT**, **APPROPRIABLE**, and **TRANSFERABLE**?



## Capabilities and Competitive Advantage

Apple is a preeminent case of a company whose unique capabilities give it a worldwide competitive advantage, particularly with respect to its ability to build platforms from a product base that integrates functional and aesthetic design. Apple has been able to leverage and exploit its California-based design and marketing advantages successfully throughout the world. IKEA is another such case. The do-it-yourself furniture and housewares company first developed a compelling set of capabilities to design, manufacture and ship furniture at low cost and sell it in a novel way in Sweden. Later, IKEA successfully replicated this formula in many other countries.

In contrast, Walmart was much less successful abroad than at home in the U.S. for many years. While both IKEA and Walmart offer low cost relative to value approaches, the IKEA value proposition is more **RELEVANT** and **APPROPRIABLE** since “Swedishness” in home design (and maybe in its meatballs) has a universal appeal and yet is unique to Sweden, whereas Walmart’s low cost model is generic and does not overcome the additional costs of doing business across borders. Its more recent success in Latin America appears to be due to the greater relevance of its model to that region, as well as the adaptation to and learning from the local environment.

### Global strategy from a global perspective

The primary question for a firm that is internationalizing by entering new markets is whether its existing capabilities are Relevant, Appropriable, and Transferable.

STAGE	EXPLOIT
Strategic objective	Leverage existing capabilities in new markets
Best for	Companies that are internationalizing by entering new markets
Organizational architecture	Led from the company headquarters
Sustainability	Over the longer term, will typically require enhancing capabilities by tapping conditions of international as well as the home markets <sup>3</sup>
Test	RAT Test
Challenges	Identifying markets where existing advantages are <b>RELEVANT</b>

<sup>3</sup>See Lessard, Luce, and Vives for further discussion.

## Applying the RAT Test to Small and Medium Businesses

The same principle applies to smaller firms, though transferability typically looms larger for these firms since they lack international expertise and cannot readily develop a large footprint in another country.

Consider the case of Aspen Aerogels, a roughly ten-year old venture-financed company that produces high performance insulation made of advanced “aerogels.” With revenues approaching \$100 million, nearly two-thirds of its sales are exports. A major application of Aspen Aerogels’ products is the insulation of extremely hot and cold pipes in refineries, where the aerogel insulation is superior since it takes up little space, is easy to install and most importantly, it does not attract moisture or deteriorate over time.

Applying the RAT test, Aspen Aerogels’ capabilities (understanding the properties of aerogels, mastering the complex manufacturing process, and both proving and gaining credibility for specific applications) are relevant in any refining facility, since the application requirements are common and variations in local conditions make little difference to the applicability of Aspen Aerogels’ products. Further, since Aspen Aerogels worked with a highly regarded lead client in proving this application, its reputational “passport” is good throughout the world where that firm’s technical prowess and high standards are well known.

Appropriability is more complex. On the one hand, Aspen Aerogels has a strong position to capture value due to its Intellectual Property and manufacturing know-how based on years of development. However, it must rely on maintenance contractors to install them, and in the first instance these contractors stand to lose revenues from a longer-lasting product. Therefore, the sale has to be made to the ultimate client who cares about lifecycle cost and to those contractors who are willing to accept “worse before better” in order to lock up a long-term relationship.

Transferability is very interesting in this case, and instructive regarding the conditions under which a small firm can succeed internationally. The product can be delivered throughout the world quite easily since it is easy to ship and, more importantly, easy to cover the market for sales since there are fewer than 500 refineries in world, with a much smaller number of major decision points. This is easily covered from the U.S. base, with a few key sales personnel in Europe and Asia. While Aspen Aerogels may be considering opening facilities outside the U.S., this primarily is in order to be able to tap the much larger building products market where a much larger local footprint is required as well.

In summary, Aspen Aerogels’ capabilities are RAT. They are **RELEVANT** because the product is universal, technically superior, and the U.S. is the lead market for their product. They are **APPROPRIABLE** because the product is protected by patents and many trade secrets in the manufacturing process. It is also **TRANSFERABLE** due to its high value of weight to volume ratio, relatively large ticket sales to small number of customers, and an even smaller number of decision points.



Aspen Aerogels supplies reinforced, flexible aerogel insulation products that provide up to five times better thermal performance than other widely used insulation materials. Aspen’s insulation solutions enable customers to conserve energy and save money in many industries including: oil and gas production and processing, liquefied natural gas shipping (LNG) and storage, building and construction, outdoor apparel, appliances, transportation, as well as military and aerospace. Headquartered in Northborough, MA, Aspen Aerogels® manufactures its three product lines (Cryogel®, Pyrogel® and Spaceloft®) at its high-capacity plant in East Providence, RI.



Sample6 Technologies is a biotech startup based in Boston, MA. They are revolutionizing environmental pathogen monitoring by coupling the world's first "enrichment free" diagnostic with a powerful control and analytics system. The company's mission is to improve the health and safety of global consumers by bringing novel technologies to food safety.

While as a general rule, a firm's capabilities, products, and services will be less **RELEVANT** and **APPROPRIABLE** outside of its home market, and less than perfectly **TRANSFERABLE** to foreign markets, there are some firms whose capabilities and products are even more RAT abroad than at home, and hence should favor international expansion at a very early stage. One such firm is Sample6, a Boston-based start-up that combines breakthroughs in synthetic biology, sensors, as well as data modeling and visualization to build integrated systems that can quickly and easily detect harmful and unwanted bacteria in the food, healthcare, and other industries. "Sample6's Bioillumination Platform™" allows for the rapid detection of these bacteria using bioparticles, which cause the bacteria to effectively "light up" when the target is identified, and return results in a matter of hours instead of days. The resulting system has several interesting properties that allow the firm's business model to "travel" quite easily. First, the system is smaller, less costly and simpler to operate than traditional, enrichment-based molecular technologies. Second the illuminating bioparticles are supplied directly by Sample6 on an ongoing basis.

Thus, it could be applied upstream in the food supply chain by farmers/shippers in developing countries, as well as downstream by retailers/distributors operating local supply chains throughout the world. Appropriability, even in remote markets, is provided by a combination of Intellectual Property, science-based regulatory approvals and by the fact that the active agents are supplied as consumables. It is easily transferable since the bioparticles are easily shipped from a central location and payment for the ongoing use of the technology is embedded in them (like Coca Cola's syrup!), with many advantages in terms of the business process. Sample6's biggest transferability challenge will be to find sales channels that will allow it to aggregate end users, since selling "down the food chain" to ultimate users (growers, shippers, local retailers) would require a much bigger footprint than is feasible for an early stage company.



A123 Systems develops and manufactures advanced Nanophosphate® lithium iron phosphate batteries and energy storage systems that deliver high power and energy density, long life, and excellent safety performance. The company's game-changing technology enables customers to commercialize innovative products for the transportation, electric grid, commercial and government markets.

A123 Energy Solutions<sup>5</sup> is an interesting case of a RAT business proposition for a relatively small firm in an industry populated by much larger firms. A123 Energy Solutions produces and packages high-performance lithium ion batteries into container-sized units that allow power producers or grid operators to integrate distributed intermittent energy sources, e.g. wind, or balance grid loads. These are complex, sophisticated products that are relevant wherever a specific grid need exists. They are appropriate because they are protected by Intellectual Property and manufacturing experience, but most importantly by the know-how to size an installation and to create the software to manage the package in a given application. Transferability is facilitated by a number of factors. The batteries are container-sized; so shipping is not an obstacle. Installation is a relatively easy task compared to grid assets like generators that in some cases require extensive permitting, as lithium ion batteries in contrast consume no water, no fuel, create no emissions, and pose no eminent hazards for wildlife. Finally, maintenance of the installed batteries over the full life cycle without requiring a significant local footprint is made possible by A123 Energy Solutions' ability to monitor the units online so that local tuning and "topping up" requires only installation rather than diagnostic skill. Parts can be supplied by airfreight and local customer personnel can do the installation.

<sup>4</sup><http://www.sample6.com>

<sup>5</sup><http://www.a123systems.com/energy-storage-for-grid.htm>

# Is Your Business Ready to Internationalize?

RAT capabilities depend, to a large extent, on how “fertile” the ground is in the home base, while a firm’s ability to exploit them internationally depends on its ability to systematically understand, regularize, and replicate these capabilities and products in other locations. Internationalization begins at home, developing products and capabilities that should be able to travel, coupled with the necessary homework needed to determine if, in fact, they pass the RAT Test – **RELEVANT, APPROPRIABLE, and TRANSFERABLE.**

It is estimated that 95 percent of the world’s consumers live outside of the United States and the International Monetary Fund forecasts that nearly 87 percent of world economic growth over the next five years will take place outside of the United States. Small and medium-size businesses will benefit to look abroad and to tap into this expected growth. There is a lot to consider, but no matter what size your enterprise may be, international trade is within reach and may be the best way to help your business soar to new heights.

## The First Step for Global Success

After determining that your business has passed the RAT test, it is important to establish an infrastructure to successfully facilitate your international trade. The first step for initiating your entry into the global forum is finding a partner that can assist your international success. Collaborating with a shipping and logistics company that has experience with other countries can alleviate some of the challenges you’ll face, especially when introducing your business into a new marketplace. These challenges include complying with regulations that differ from country-to-country, overcoming language barriers, as well as determining the appropriate e-commerce solutions for your business needs. There are a variety of obstacles you will have to undertake, but the right partner can help simplify your road to global success.

For more than 40 years, businesses of all sizes and industries have successfully partnered with DHL Express to innovate and extend their presence abroad. DHL Express has built their reputation as an industry leader by focusing solely on international shipping and logistics. Their expertise also includes specific solutions designed to meet the unique needs of both small and medium-sized enterprises. To learn more about DHL Express visit [www.dhl-usa.com](http://www.dhl-usa.com) or call 1-800 CALL DHL.



#### **ABOUT THE AUTHOR:**

Donald R. Lessard is the *Epoch Foundation Professor of International Management* at the MIT Sloan School of Management. His research interests are in global strategic management and project management, focused on the energy sector, with an emphasis on managing in the face of uncertainty and risk.

He has published extensively on these topics in academic and professional journals, and is co-author of *Strategic Management of Large Engineering Projects: Shaping Institutions, Risks, and Governance* (MIT Press 2001 with Roger Miller).

A member of the MIT faculty since 1973, Lessard has served as Deputy Dean of the Sloan School with responsibilities for research, international programs, and executive education; co-chair of the Energy Education Task Force that launched an Institute-wide undergraduate energy minor; and founding director of the MIT Executive MBA, the BP Projects and Engineering Academy, and the Li and Fung Executive Development Program. He also led the MIT-Merrill Lynch Partnership, MIT's first large-scale collaboration with a financial services firm.

A leader in international management education, Lessard is a past President of the Academy of International Business and Dean of the Fellows of the Academy. He is a Senior Fellow of the Fung Global Institute, a think tank based in Hong Kong. A senior advisor to the Brattle Group, he has led major consulting assignments with firms, banks, and government agencies throughout the world.

Lessard earned his BA in Latin American studies and his MBA and PhD in business administration from Stanford University.