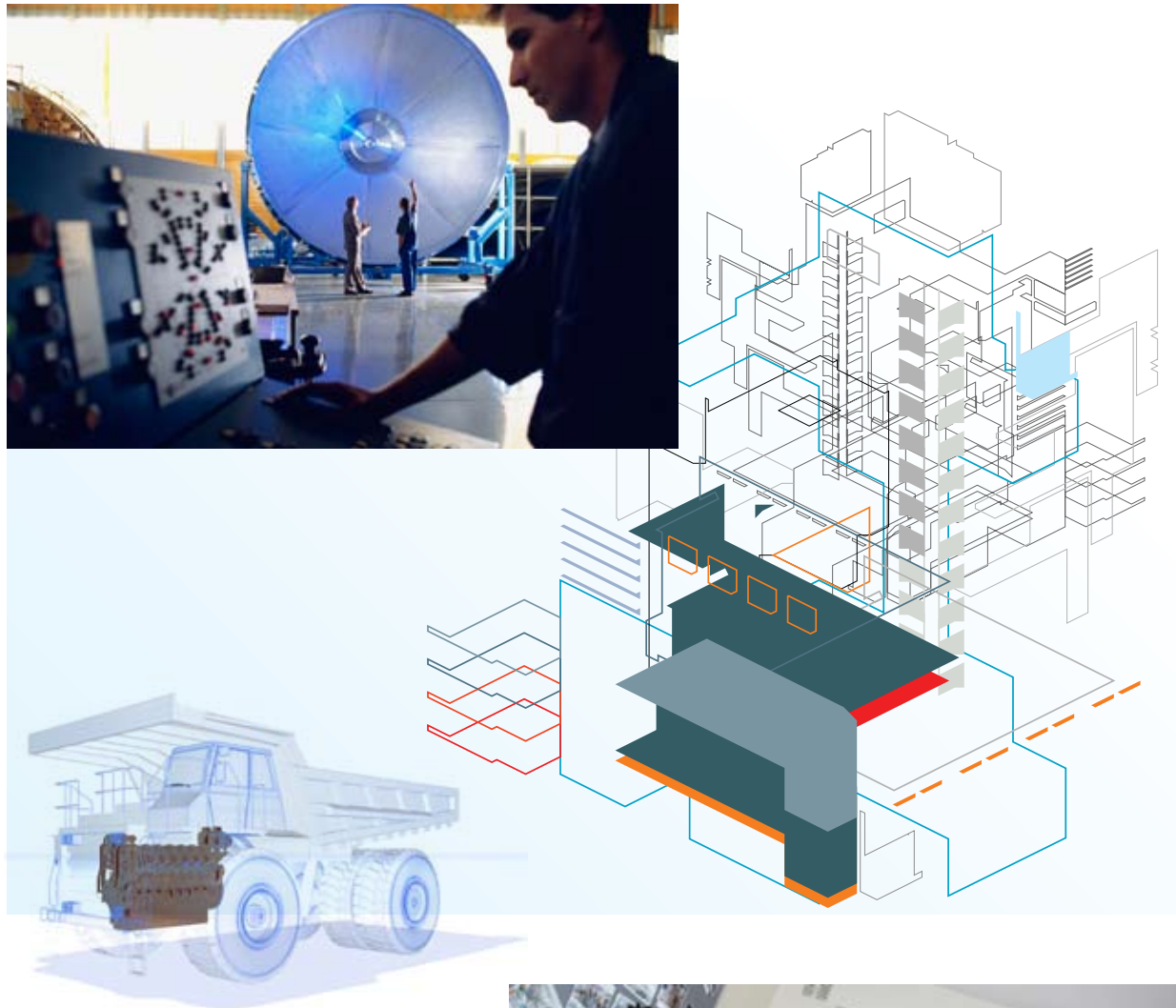


SMBS: A BLUEPRINT FOR SUCCESS

★ Chapter 2 ★

Growing Business Through Superior Product Development

SMBS CAN CAPITALIZE ON SPEED AND AGILITY TO TAP NEW MARKETS IN A TOUGH ECONOMY.



» Leading small and medium-sized businesses (SMBs) understand the value of speed, agility, customer responsiveness and cost containment in the dynamic global marketplace. Combining these traits creates competitive advantage. But how can a SMB in the complex sphere of discrete manufacturing infuse its internal processes with these attributes and ensure that such processes propel long-term success? Especially during a time of shrinking markets and budgets?

Our blueprint for success, outlined below, calls for SMB executives to commit to strategic imperatives of market growth and/or improved profitability, two models that yield competitive advantage regardless of economic conditions.

Four key business initiatives tied to product development support these imperatives:

- Increased design reuse.
- Reduction of production scrap and rework.
- Replacing physical prototypes with virtual prototypes.
- Improved collaboration.

Focusing on product development reflects a major shift in value-creation fueled by the globalization of goods-producing sectors: Today, long-term competitive advantage arises from the processes (sourcing, research and design, production, delivery and service) within manufacturing

A BLUEPRINT FOR SUCCESS

How to improve product development activities to increase value

	GROWTH	PROFITABILITY	
GOALS (value opportunities)	Create customer-focused products	Lower lifecycle costs	GOALS (value opportunities)
	Improve capability to fulfill demand	Lower product costs	
	Develop and define new markets		
Design to realize a price premium			

KEY BUSINESS INITIATIVES

★ Increase design reuse ★ Reduce scrap ★

★ Improve collaboration ★ Increase the use of virtual prototypes ★

Once a company has prioritized its goals, next comes selecting one or two business initiatives that will help it reach the goals. These concepts are discussed in detail in the next two chapters.



in addition to the manufactured goods themselves. This truism does not leave quality behind. Rather, it puts quality (value as defined by the customer) in its rightful place — at the fulcrum of each value-creating process.

But product development also has become more difficult. According to a 2008 survey by Aberdeen Group, manufacturers said multiple pressures are driving their adoption of product-development technology — such as product lifecycle management (PLM) solutions — including these top five:

- Shortened development schedules/need to improve use of engineering resources. 49%
- Demand for increased quality/reliability. 24%
- Globalization of the design process. 21%
- Increased product complexity. 18%
- Corporate goal to improve innovation. 13%

In this chapter, we will look at how the four business initiatives listed previously can increase the value created by product-development processes and support the strategic imperative of market growth. In the forthcoming third chapter, we will do the same for the strategic imperative of profitability.

SMB Growth Opportunities

SMBs can find growth opportunities in even the most difficult of markets because their smaller size and tendency to be privately held give them an advantage over larger companies. We have observed four successful ways for SMBs to grow:

» Satisfying a particular need that isn't being met, potentially in a market that already exists.

This is the most obvious opportunity to tap a new market with a new product design. Monitoring online consumer commentary is one way SMBs are identifying unmet needs. For instance, a maker



of sling-style infant carriers identified a need for a new design by monitoring the chat rooms of a leading competitor. Parents wanted a portion of the sling to be separately removable for frequent washing. Be-

cause the smaller manufacturer could quickly design such a carrier and get it to market, it was able to fill the need faster than the larger competitor, thereby claiming a portion of the dominant competitor's market.

» Fulfilling demand that isn't being met for an existing product.

Such shortages could be due to a competitor's lack of capacity, supply shortages or inefficient processes. Sometimes supply-chain problems are behind the shortages, but for SMBs, the shortages most often occur because of poor timing.

"If you are a toy manufacturer, and you bring out your toy the first week of January, you've kind of missed your opportunity," explains Tom Shoemaker, PTC vice president for product marketing. "There are certain segments and companies that have a window in which to release their products. This can apply in high-tech products, medical de-



vices, and niche verticals where an SMB has to be nimble enough to fulfill a need at a certain time."

This also applies to SMB producers within supply chains, such as tooling and injection-molded parts producers. If they can't fulfill an OEM's demand quickly, the OEM will source from someone else.

» Identifying and fulfilling new market opportunities first, such as crossover vehicles and iPods.

SMBs that know their markets the best and can deliver products the fastest have the advantage here.

» Designing for a price premium. Customers in this category require high-performance products and are willing to pay a premium price. Often, low-vol-

ume SMBs are best at meeting their needs. Santa Cruz Bicycles, Santa Cruz, Calif., is one such company. Its high-end customized mountain bikes sell for thousands of dollars, about 10 times more than for a "regular" bicycle. The company is deeply entrenched in the enthusiast community that is its market. It posts detailed videos and blogs about bike design and manufacture, participates in world-renown races and events, and is considered a historical figure in the city of Santa Cruz, which is known for its biking culture.



"There are niches in most consumer and commercial markets for highly specialized products that really don't lend themselves to mass production," Shoemaker says. "The larger enterprises are not going to get into these spaces. This is typically where you see the SMB price-premium advantage."

Business Initiatives and Growth

All of the four business initiatives in our blueprint for success support these value-driving growth pathways. Let's take a look at how they contrib-

ute to the sustainable competitive advantage of superior product development.

INCREASED DESIGN REUSE improves speed and agility, which enables SMBs to quickly fulfill pent-up demand, move into new markets or newly created markets, and respond to market changes due to forces such as new regulations and volatile commodity prices.

REDUCING SCRAP AND REWORK connects this speed/agility to quality/value, ensuring that new-market growth is profitable growth. It does no good to increase revenues if costs increase as well.

One midsize company that combined both of these initiatives to become more competitive is Venmar CES, a Canadian manufacturer of energy-recovery equipment. The company wanted to improve its ability to fulfill demand by improving the design process and manufacturing efficiency. Investing in product-development technology helped Venmar reach its goal.

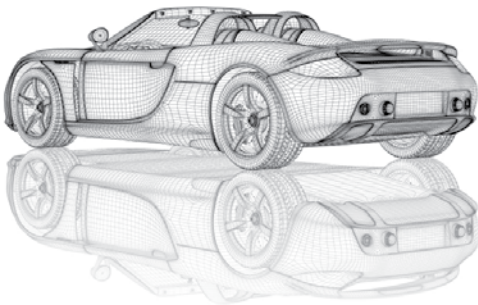
Value Drivers Mapped to Top Business Initiatives

		BUSINESS INITIATIVES			
		Improve design reuse	Reduce scrap & rework	Increase digital prototypes	Improve customer collaboration
VALUE DRIVERS	Grow market share	○	○	●	●
	Fulfill demand	●	●	◐	◐
	Develop new markets	◐	◐	●	●
	Realize a price premium	○	○	◐	◐
	Lower product cost	◐	◐	●	◐
	Lower lifecycle cost	●	●	◐	◐



INCREASING DIGITAL PROTOTYPES yields shorter concept-to-market cycles, improved agility in market differentiation, and documentation of internal product knowledge — fostering new ideas and protecting intellectual property.

Cochlear, a global producer of hearing implants, has a growth strategy of early entry into new markets. To achieve this, the 20-year-old company invested in product-development technology to increase innovation through collaboration, and to increase the number of digital prototypes it uses (decreasing the need for physical prototypes). This will speed up the company's cycle of ongoing new-product introductions.



IMPROVING CUSTOMER COLLABORATION delivers first-to-market advantage, early clues into changes in the marketplace, and clarity on opportunities to deliver more value to customers.

Adding services, which often have higher profit margins than products, is one way SMBs have increased profits to offset rising energy and material costs in recent years. For example, industrial pump producer SPP Pumps realized through improved customer collaboration that it could provide a service as well as equipment, thereby combining two things that customers highly valued and would pay a premium for. SPP's customers must maintain extensive documentation about their pump systems in order to meet insurance and safety requirements. SPP now offers documentation services along with its pump systems, which require a mix of high-value components, exotic materials and long lead times. Thus, in a mature market facing pricing pressure, SPP found a way to keep prices at a premium.

Going Forward: New Capabilities

Even in today's uncertain economic times, leading

“WE’RE ABLE TO PRODUCE MORE PRODUCTS IN THE SAME AMOUNT OF TIME AND HAVE SHORTENED OUR TIME TO MARKET BY TWENTY-FIVE PERCENT. ULTIMATELY, THIS LEADS TO MORE REVENUE.”

MARC-ANDRE VERVILLE, DESIGN TECHNICIAN, VENMAR

SMBs are using these business imperatives to support growth initiatives. In fact, these initiatives are becoming more important as companies add new capabilities, says Shoemaker.

“Things that are really important to them are things like reusing design — taking designs that they’ve done in the past and adapting them for new design. That is as important — if not more important — than in the past when times were strong. The fundamental ways that companies are doing these things is similar to the past.”

But, companies might be doing other things differently, such as an automotive supplier looking to supply a different, high-growth industry.

“One of the advantages that an SMB has is that it is able to switch strategies almost in stride with changes in the market because they are more nimble than their larger brothers,” Shoemaker says.

Finally, having high-quality product-development processes allows growing SMBs to iterate designs many times in many options and have completely realistic and viewable designs that can be taken to customers to validate demand before investing in tooling and other expenditures. This is the ultimate illustration of gaining competitive advantage by creating the right processes before making products. Growing SMBs that do this will increase profitability along with growth because they will have a clearer picture of what customers value in real time.

Says Shoemaker, “The ability to do a whole lot of work well before you ever move from the digital world into the physical world is great [for growing SMBs] because they’re not buying inventory, cutting metal, and doing other things that are going to be very expensive to redo.”