Part I – Overview, and Opportunity Identification/Selection

Suggestions for Using Materials in Part I of the Text

Including Answers to the Applications and Case Teaching Notes

INTRODUCTION

Each of the following parts contains: (1) Comments about one part, how it relates to the others, some postures you might want to take toward that material, and things to watch out for; (2) "answers" to the applications situations which are given at the end of each chapter; (3) a teaching note for each of the cases given at chapter ends; (4) some thoughts relative to possible projects that might be assigned to students; and (5) the key concepts that the student should take from a study of that part.

CHAPTER CONTENT

Here is the outline of Part I, Overview and Opportunity Identification/Selection.

Chapter 1
The Strategic Elements of Product Development

No cases.

Chapter 2
The New Products Process

Cases: Lego, Tastykake Sensables, The Levacor Heart Pump.

Chapter 3
Opportunity Identification and Selection: Strategic Planning for New Products

Cases: New Product Strategy at Kellogg, Honda Element.

INFORMATION FOR THE NEW ADOPTER

Getting started on a new products course is not unlike the problems of getting started in all courses. Each instructor has individual preferences. We like to take plenty of time to make sure the student understands where this course comes from, because it necessarily is unlike other courses in the department where taught. Furthermore, almost all offerings are rather innovative (new products instructors like to do product innovation too!), and there is usually some hands-on work in the course which needs explaining.

The introductory chapter is where most instructors like to point out their individual slants and interests--e.g., technology or new product marketing. But, whatever the viewpoint, we urge

you to develop fully the idea that new products are a high-risk area of management, that careers can be made or lost here, and that the managerial approaches are usually built around this risk factor. Managers are usually under great time pressure when working on new products, so they have to go ahead when they would rather test some more, and yet they have to stop to test thoroughly on those things that really matter. Learning how to tell which is which is a key aspect of this course.

Yet this field is fun too, lots of fun. Interesting people work in it, partly because they are confident enough to believe in their ideas when others laugh at them and partly because they live a very risky life and know it. Most new products people are essentially creative, creative in their management styles, in their life styles, and in their attitudes. It is not a dull field.

Chapter 1 introduces the students to the strategic elements of new product development. First and foremost among these is the new products process, introduced in Chapter 1, and further extended in Chapter 2. Students have little idea of what is involved, unless they got parts of it in some other course, or worked in a firm and think what that firm did is what all firms do. The situation is much like that of the six blind men and the elephant--each student sees only one perspective. So explain it in detail, and try using the Tastykakes case to help. The Tastykakes case tells the story of the entire development of a new snack product, from start to launch, that was designed to capitalize on the low-carb food fad in full swing during 2004. If the student understands the overall process, the whole course makes a lot more sense.

Chapter 3 contains the second and third strategic elements of new product development; the Product Innovation Charter (PIC) and the product portfolio. Students find this perhaps the toughest part of the course. There is a natural instinct to resist being bound by tight strategy, so the advancement of new products strategy has been slow. Many managers hate it, because it is fully intended to give focus and restrict freedoms. Yet top managements know there must be strategy--very few firms give free rein to their new products staff, and then only in think-tank situations (which are not thriving, incidentally.) Unless the student buys the idea of focus, the whole of Chapter 3 gets lost. The same goes for managers, in continuing education seminars. Tied to the PIC is the notion that firms need to consider their existing product portfolio – its strengths and weaknesses, and how it needs to be adjusted or improved – when selecting new product projects to invest in. Again, a very high level strategic discussion, but one which is really essential to understanding the strategic role of new products within a company.

We urge you to build the discussion around the PIC and around specific company situations. The Kellogg's and Honda cases are examples, but the instructor and the students usually have many others. The text contains many, any of which can be discussed. If you don't like the PIC format used in Chapter 3, develop your own. It helps to have the pieces tied together somehow, so the assignment can be communicated to members of the team (and to their bosses back in the departments).

INFORMATION FOR THE PREVIOUS ADOPTER – MAJOR CHANGES TO PART I

There are major changes throughout Part I, much of which is an update to include the data from the newest CPAS (Competitive Performance Assessment Study) conducted by the PDMA in 2012 and released in 2013. The first three chapters continue to introduce three concepts (new products process, product innovation charter, and product portfolio) as the three *strategic elements of product development*. This unites all the key strategies involved in new product development, and serves as a foundation for all aspects of product development presented in later

chapters. We have expanded the discussion of portfolio models to bring in the newest research on this topic, and have added the Lego case to Chapter 2, which serves as an example of the importance of a coherent innovation strategy at the highest levels within the organization. Greater attention is now focused on breakthrough innovation and what leads to "really-new" products. There is the coverage of the newest research on the role of the serial innovator, and also expanded coverage of probe-and-learn innovation research, which now is introduced under the name "spiral innovation" which is increasing in popularity.

PROJECT SUGGESTIONS

There won't be much time available for projects in Part I, because the material is heavy, and the instructor is usually in a hurry to get into the concept generation stage. If the students will be working on a term-long project, it should probably begin after Part I, because in real life the guiding strategy would have preceded the project. If desired, students can be asked to take a firm of their choice, write out what they think an acceptable PIC would be, and then do their work within that. But in a way this is dangerous because it asks the student to develop strategy without the very rigorous analytical work such strategy deserves. Our experience is that the type of ideation done by students can be independent of specific firms. After they find a concept they want to work with, you can ask them to identify a firm where there would likely be a PIC the idea would fit, and go on from there.

Another type of activity is to ask the students to bring from their experiences or from the business press examples of company new product strategic thinking. A variation is to ask them to apply the concept to non-business organizations around the school, even to the school itself. Students like to discuss new products strategy in the context of business school curriculum development, and many of the relevant issues arise.

Perhaps the ultimate project is to ask students to write out their own individual PIC's. They have a "product line," or at least one product (i.e., themselves), and they are in school improving it or adding to it. What guides them? Nothing? Let's hope not.

Applications Teaching Notes for Part I

(Recall that each application is a statement or question made by a company president during a job interview with a student taking the current course.)

Chapter 1

> **1. "When you were talking a while ago about taking risks, I wondered just whose money you were talking about. A fellow I know out in California insists that all new product team members invest their own money (with his) in their projects. Fifty thousands dollars is not unusual. In that system, I'll bet you would be seeking to *avoid* risks, not trying to *find* them."**

Students tend to take this idea with skepticism – they often say, "That's a lot of baloney." But the fact is, it happens, especially in the Silicon Valley and other parts of innovative California. And it is a sobering thought. $50,000 isn't all that much to Californians buying a house, but it is to one who has to come up with the cash. And woe to the manager who says the project is too risky.

Students will soon run out of answers on this one. Of course, they would not be working for such a firm in the first place if they thought the idea unfair. And if they had no choice, they would avoid new product assignments with great adroitness. Luckily for all of us who have worked on new products, most managements won't consider the approach. Too scary? Too discouraging? No. They object because they know they would have to treat the managers like venture capitalists, and they would have to take on far more risk themselves.

2. "Funny thing, though, it sure does frustrate me when I hear a division general manager's strategy is to imitate other firms. Now I know that some firms might reasonably use imitation, but none of my divisions should. Should they?"

It's dangerous to argue against this thinking. Everybody supports innovation. To imitate is inferior, something one should do only under the most adverse conditions, and when innovation is impossible. But, whether to imitate or innovate is not a moral issue (usually), so the answer to the president can be found in dollars and cents. Look at the firm's market and its strengths. To our knowledge, there is little R&D being done on brooms, railroad ties, table salt, and yo-yo's.

What the president says, however, *is* the strategy of many firms. One example is 3M. The answer to the question lies in getting out of markets lacking opportunity for innovation. And this may be expensive, or almost impossible, for some divisions or firms. Lots of businesses make a nice profit on product lines where this is little innovation possibility. The president should be encouraged to avoid generalization, and support innovation where it has good payoff possibilities.

3. "I would like to be sure as many of our people as possible support innovation, but I know some people in the firm just can't react positively to proposed innovation, no matter how much we need it. Tell me, how do you think I should go about spotting the worst offenders, and what should I do with them when I find out who they are?"

This inquiry indicates an important aspect of these application situations. Presidents don't respect chapter outlines, and we should encourage students not to wear blinders too tightly either. Anyway, in this case the president is treading on dangerous ground. Organizations cannot hope to staff only with risk-accepting innovative types. We can only imagine what life in such firms would be like. But people come in all types, and organizations need all types. Not all jobs, even on new product projects, call for risk-takers. We will see later there is a role in this work called *rationalist*, a person who says Show Me, at times when others are running with their anchors too high off the ground.

But the president is right in asking about spotting anti-innovators. They show up rather readily, and are in fact known to most supervisors and personnel departments. They are quite risk-averse, and try to avoid the risk in their personal lives as well as in their business lives.

And they should not be given a leadership role in new product work, nor should they be where they can unnecessarily retard a project--in charge of operations, for example, or venture funding. Nor as general manager or president, either. It is also fairly clear that these people cannot be "retrained" to be more risk-accepting, though there is some opposition to this statement among some human resource people.

Chapter 2

1. "I've got to make a speech down in Dallas next month. It's part of a conference SMU is having on the general topic of opportunity identification (OI). They want me to explain why OI is sometimes more important than brainstorming and other techniques of concept generation. Seems to me it isn't. What do you think?"

Here the president is setting brainstorming off against opportunity identification, as though they were substitutes. In fact, they go together beautifully. Like saying that a good trout rod and fly collection go well with a good trout stream. One wants the best equipment, of course, but if the fish aren't there, not many will be caught. And in the best streams, having good equipment pays off. So, yes, OI is very critical, and lots of firms miss the benefits when they skip the strategic planning stage.

In fact, we can argue that OI may be the most important single step in the process, as will be explained later in Chapter 3. You might ask the class which is more important in advertising: a good target market or good persuasion in the copy?

2. "I work for a financial services firm. We do new product development all the time, and a lot of it is of the incremental variety. You know, bundle credit card access to a savings account, bundle the savings account to a money market account, add an IRA investment option, things of that sort. Explain how the new products process is relevant in my industry, and to my company. Seems like it's more tailored to physical goods. Isn't it a little misleading?"

This question is designed to get the students thinking about the broad applicability of the new products process. The familiar multi-step process that serves as the core of this text, and most new product courses, is most obviously applicable in the case of new physical products (i.e., where "development" really does mean drawing up blueprints, making physical prototypes, etc.). Students may be skeptical about its applicability in the case of services. But, as the chapter points out, services are developed too: in the financial services industry, new products come out all the time, as the question itself admits. These may be of a bundling nature: as in the question, an existing savings account product may be bundled with other financial services. Similarly, in insurance, familiar corporate life insurance policies may be bundled with newly-developed products, such as an on-line referral for advice and counseling (on financial or family matters, for example), in order to provide a more comprehensive service to the customer. These services can be concept tested, product use tested, tracked and measured for performance after launch, and so on. The chapter material on new service development is very useful in this discussion. If desired, the instructor can use the chapter material on new-to-the-world products to compare and contrast their development to incremental new products (i.e., at what stage should physical prototypes be developed and presented to customers for feedback?).

3. "We are increasingly committed to really new products -- we see them as the future of our company. Can you explain to me again what the new products process looks like for them? I'm not really convinced that the process you outlined is applicable to them. Seems like it will generate more incrementally new products rather than bold new ideas."

To properly address this question, keep in mind the first phase of the new products process: strategic planning and opportunity identification. If the firm's product strategy focuses on the revolutionary and the groundbreaking, then later phases of the process will be in keeping with this. (More on product strategy, or the Product Innovation Charter, in Chapter 3.) The Levacor case at the end of Chapter 2 is a good illustration of a firm that places high priority on competing as a cutting-edge innovator, and also clearly illustrates the risks. If a firm decides to search close to home for its new product ideas, of course it will come up with mostly incrementally new products. But that's because of where it decided to look! It is no coincidence that a clear statement of strategic purpose is the first phase of the new products process we describe. We know of many firms that have achieved excellence in new product development (both incremental and revolutionary) that have put in place new products processes very similar to the one shown in this book.

Chapter 3

1. "I'm afraid I don't follow your reasoning very well when it comes to this matter of innovativeness--being a pioneer, an adapter, quick second, and so on. Seems you've always got to come up with something new, or it simply won't sell. I believe we agreed on that earlier when we discussed the concept that winners market unique, superior products. Further, if you've got something new, why in the world would you ever want to be less than first to market with it? You'll lose your uniqueness that way. Sounds like you've taken a simple practice and made it complex."

Perhaps so, and for good reason. These matters should not be dispensed with by simplistic practice models. Yet students do often fail to see the significance of matters in this area of strategy, and so do some practicing managers. It is not a simple chapter.

First, note that the chosen degree of innovativeness is a strategy--a plan, an intention. One *plans* to be pioneering, or one *plans* to be a quick second. What actually happens in any given situation must reflect what eventually comes out of the technical design process. If a firm plans to be adaptive, but finds something that permits it to be pioneering, it is doubtful they will wait until someone else discovers it! Likewise, if they plan to be a late follower, but in a particular situation can be a quick one, within the cost and risks constraints, they probably will be.

Second, there is nothing sacred about one strategy over another. For some firms, being pioneering is fine, but for others it would be disaster. The entire business unit must support a particular strategy, and matters like degree of innovativeness cannot be changed quickly. For example, the firm which has no distributor training capability and no product technical service

capability had better not be pioneering new products. They would be much better off going to low-cost production, unless, of course, they wanted to change their capabilities. White Consolidated has been able to make a profit on several lines of major appliances whereas the previous owners of their brands (e.g., General Motors owned Frigidaire) were not able to do so. In no way would the present White Consolidated opt for pioneering uniqueness as a new product strategy. And in no way would General Electric decide to shoot for low-cost imitator status in the lighting business. It all depends, and it should.

2. "Somewhere along the line, R&D gets the short end of the stick. Now, I know about the arguments for strategy, but I really do feel that R&D deserves a better shake than to simply be told to do this or that. Some of our top people are in R&D--our electronics division has a couple of the world's best fax technicians. If I were doing it, I think I would have R&D prepare the first draft of a PIC, at least their areas of a PIC, and then have other areas like manufacturing add to it. When all of the interior departments have their sights properly set, I would ask marketing to reconcile the PIC with the marketplace. Otherwise, we'd have the tail wagging the dog when it comes to the new products function."

In developing a new product innovation charter, all department inputs are sought; the process is integrative and team-based. It is not a series of modular actions by separate departments.

But, the question raised in this application goes deeper than that. First, the president may be correct in that R&D could really develop the strategy *if* the firm were almost totally technology-driven. In many pharmaceutical companies, the research laboratories essentially select those medical areas which will be researched.

Second, however, the president displays some alarming misconceptions in several of the statements. Specifically, the PIC should not start in any one functional area--it should start with a general manager, either in title or by virtue of being the new products manager. Additionally, there is a false distinction made between interior and exterior departments. Marketing speaks for the marketplace, but this does not make them outsiders. Still further, the statement implies that marketing can only *reconcile*, not originate. In cases where the new products function is marketing-driven (not market-driven) marketing people are responsible for making the many assessments (e.g., of R&D capability, manufacturing capability, etc.) on which the strategy will be built. Many managements feel marketing people can learn to assess technical capabilities better than R&D people can learn to assess marketing capabilities.

Lastly, the crack about the tail wagging the dog continues the misunderstanding. There should be no tails and dogs. Strategy should be developed by a team that has a strong functionally-independent leader.

3. "I saw the other day where film makers (large ones as well as small ones) are finding profits in low-budget films. It seems they aim for narrow, but very reachable market segments, (e.g., young kids), and they use standard film-making technologies but use only what they call "emerging" actors and directors (meaning "cheap now"). They try hard to capture the interests of their core target group, and they mean it when they say low-budget. I also read where several of them are trying to move out rapidly from the core when they have a

winner--little kids, bigger kids, etc. They think this approach yields the best return on investment even though it causes them to miss out on the occasional block-buster winner. You may not even remember hearing of some of these low-budget specials, but they had names like *The Waterboy, There's Something About Mary, Rush Hour,* and *The Wedding Singer.* That last one focused on boys and men, but they added a love story line with Drew Barrymore that brought women in too. Now, can you fit all that into what might be the PIC of these films? What are the negatives of this approach?"

The student should be encouraged to think about the four components of the PIC as outlined in the text, with respect to the growth seen in recent years in the low-budget end of the film industry.

While answers will obviously vary, some ideas that should come up include the following:

Background/Arena: The movie-making business has changed remarkably in recent years. Many industry observers point to the huge budget and phenomenal success of *Star Wars* in the late 1970s as the real turning point in this industry. By the mid-90s, while the major studios were focusing on high-tech, special-effects-laden movies with big-name stars that demand huge salaries, independent movies shot on extremely limited budgets with then-little-known actors and directors (such as those of Quentin Tarantino or Billy Bob Thornton) were making money. The industry actually dichotomized during the 1990s. No one was interested in making a "medium-size" movie (as it would be eaten up by the blockbusters that cost two to four times the amount to produce, and would end up competing against indies shot on a shoestring budget). So, blockbusters on one hand, and indie projects on the other, seemed to be the norm. Blockbusters, of course, could make a bundle (*Terminator*), or lose a bundle (*Dick Tracy, Godzilla, The Avengers*).

A failed blockbuster could spell financial trouble for investors, such as marketers seeking tie-ins (e.g., Burger King and *Small Soldiers*), and could jeopardize successful acting careers. A single disastrous would-be blockbuster could financially cripple a studio (*Heaven's Gate, Ishtar*). Indie movies, by contrast, cost little to make, and occasionally would break through and make a substantial profit while jump-starting the little known actors' careers.

Other changes in the movie industry would need to be considered as well. For one thing, many movies that had little success in the theaters would eventually do rather well as a video sale or rental, and direct-to-video movies were becoming commonplace. Further, indie productions were beginning to be recognized by the People's Choice Awards, and ultimately by the Academy Awards. Major Academy Award categories such as Best Picture or Best Actor had been the exclusive domain of the major studios until recently.

Also, mergers and takeovers in the movie industry may have put pressure on studios to be more bottom-line-oriented and reduce risks. Industry insiders say that big-budget movies such as *Godzilla* are so tied up with merchandising tie-ins, timed to go at the time of the movie's release, that the planned release date must be met – even if more (and perhaps substantial) fine-tuning by the director would have greatly improved the movie's quality. As an extreme example of this, many industry observers felt that Warner Brothers released *The Avengers* without a press screening because they knew the movie would be skewered by the critics. Other structural changes are inevitable: The big studios are releasing less movies per year (Disney went from about 30 to about 15 per year over the late 90s), as each individual movie is seen as being so risky; and there will be a trend away from sequel movies (as the actors from, say, *Speed* can

demand exorbitant salaries to appear in *Speed 2*). (For more information on trends in the movie industry, see *The Gross: The Hits, The Flops – The Summer That Ate Hollywood*, Peter Bart, St. Martin's Press, 1999.)

Goals/Objectives: These structural changes in the movie industry put pressure on competitors (big and small alike) to increase efforts on smaller-budget movies. Seeing that many of the indie producers were aiming at narrowly-defined demographics, the big studios were following suit with movies such as *The Waterboy* and *The Wedding Singer*. While students will no doubt state goals and objectives differently, they should include a statement of profit goals as well as market share within key demographics. Other performance measures are peculiar to the movie industry and may be mentioned as well: gross receipts in first week or first two weeks of release (movies have a notoriously short shelf life), receipts from video sales and rental, even awards received/recognition won.

Guidelines: (For the big studio trying to capitalize on the growth in low-budget popularity and profitability) These can vary widely, but could include: Use actors that have had some success in very-low-budget movies (Holly Hunter and Parker Posey come to mind), stay with demographics that have shown interest in the low-budget films (teenage and young adult, especially though not exclusively males), try to develop low-budget alternatives for other key demographics, have an absolute budget cap for every movie, etc.

Case Teaching Notes for Part I

LEGO

Chapter 2

An important learning point in this case is that Lego tried all of the familiar recommendations to improve innovation (explore full spectrum of innovation, open innovation, blue ocean strategy, disruptive innovation, hire diversity and creativity, "walk in the customers' shoes," and build an innovation culture. And none of these worked. According to Wharton professor David Robertson, the problem was not that these "innovation truths" are actually false. The real problem was that Lego had geared up a great innovation engine – it could turn out innovative new products with the best of them – but the innovation engine lacked direction, or as Robertson puts it, a "guidance system." To re-orient itself, Lego would need to provide direction to its innovative process, so that it would turn out "successful new products" and even "company-saving new products," rather than just "new products."

A guidance system requires answers to three questions: where are you, where do you want to go, and how should you get there. In the case of Lego, that means having a solid grasp of how each innovation links to, and supports, overall firm strategy, and having a clear knowledge of projects and product portfolios at all times (so that the best additions to the existing product line can be made). This is basic strategic-element thinking right from Chapter 3 of the text.

What Lego did to stave off bankruptcy was brilliant. First, they realized that the innovation engine was too busy spinning out new products. It had to be slowed, so fewer products (but those with higher chances of success) were in the pipeline, and existing collections could be consolidated (it is easy to understand the need for one or two lines of Lego people, but hardly rational to have seven almost-identical lines).

Lego completely redefined innovation within its organization, broadening the definition to mean product, process, communication, and organizational innovation. Lego gathered information from users and retailers, and product teams aligned with customer communities, such as those that grew around the phenomenally-successful Mindstorms product line. Designers and marketers received customer feedback so that they could concentrate on innovations with high profit potential. The organization was reorganized in order to define roles. For example, while a Concept Lab existed, there was little incentive for the lab to work on radical new ideas since they were not a profit center. This all changed under the reorganization, new positions were added so that product designers would have more discipline in the ideas they pursued, and the Concept Lab became focused on high-potential ideas. Lego also implemented a phased process that looked very similar to the new products process of Chapter 2. The process lasted two years, and a new process initiated every January (so the last half of one process and the first half of the next process would overlap). Extensive reviews throughout the process ensured excellent project review and a good understanding of the innovation pipeline. New metrics were introduced that provided objective performance assessment and ensured alignment of incentives to strategic objectives.

Lego's innovation initiatives paid off. Between 2007 and 2010, a bad period in the toy industry in general, Lego revenues increased 25% and profits 50% annually. According to Prof. Robinson, the turnaround was primarily due, not to growing innovation within the firm, but to taking an existing, powerful innovation engine that was impossibly unfocused, and attaching a

guidance system to it. In his metaphor, the guidance system, just like one on a spaceship, caused "an accident that could have happened" to be avoided.

Note: This solution is largely based on Anonymous, "So What Did Lego Do Anyway?", *Visions*, 36(1), 2012, pp. 24-25.

TASTYKAKE SENSABLES

Chapter 2

First, does the Tastykake process compare well with the process described in Chapter 2? Yes, it seems to, though the sequence was not too clear in the presentation, nor was it in practice I suspect, because of the unique nature of packaged goods. Unless there is a major technical breakthrough, packaged goods can often go to prototype at the time of concept testing. This yields target market, positioning statement, price, and perhaps other aspects of the new product. So the technical function is often running to catch up with the marketing people. In some cases, production is the biggest technical breakthrough, as it was here, as evidenced by the difficulties encountered in the production of some of the products originally envisioned.

But, in general, think about their strategic statement (fill a gap, etc.), about the concept generation (mapping, etc.), concept/project evaluation (concept testing, technical checks, etc.), development, and then launch. This is the sequence shown in Figure 2-1.

Note too that the steps were not lockstep, and there were no clearcut stage-gates. It seems that, at the urging of senior management, the goal was to "get it done." Certainly, the decision to speed up the process partway through put a lot of pressure on the development team—warranted, maybe, but at the risk of possibly sacrificing some product quality. At the very least, senior management ought to have considered the effects of speeding up development on the integrity of the stage-gate process.

On another issue, three basic causes of new product failure are: no need or want; product didn't meet the need or want; product was not well marketed. The Sensables group knew about them--they insisted strategically on the first one (the need for a low-carb product), they did testing to be sure on the second, and they appeared to focus sufficient attention on the requisite marketing activities.

Having said all that, how about the second question at the end of the case: Regardless of how well Sensables do in the market, would you question anything they did? Students will, because there seem to be clear omissions. Here are a few of the issues:

1. Gap and trend are important, but incomplete. There must be more to Tastykake's new products strategy than those--for example, there is no requirement for technical accomplishment, no requirement about patents or other market protection devices, nothing given about financial requirements, etc. This will become clearer to students when they study Chapter 3.

2. There was no statement at any time about a team, and whether the team met. Much of the responsibility seemed to fall on Sawicki and the product researchers, with occasional feedback from marketing and senior management at the evaluation points. Also, there was no clear evidence about other stakeholders such as vendors and distributors. Some will criticize Tastykake for this: the evaluation steps should not be the only times the team members get together! That's not what stage-gate implies.

3. The alpha testing (among senior managers, then later with district sales managers) was accomplished for the simulated market testing, but, this would normally have been done before technical development was completed. The product eventually did hit the market, but additional production difficulties were encountered and the launch was delayed by several weeks. More complete testing of the prototype might have caught these bugs and reduced the extent of delay..

4. Little was told to us about the specifics of the marketing program, nor was there any evidence that the marketing program was pretested. Certain aspects of the launch were strategic givens (see Chapter 16): for example, there was never any doubt that the existing Tastykake

distribution channels and truck delivery services would be used. But, and here is a question that arises frequently from students, do we ever really know that low-carb Tastykakes are going to be welcomed by the marketplace? All we know about the origins of the product is that top management wants to "ride the low-carb wave." We even discover that Tastykake decides to downplay the carb advantages of Sensables, due to FDA monitoring concerns. Schutz does come up with a value proposition: low-carb, no sugar, portion control – but is it effective? Is the name "Sensables" effective? How about this: if you are really watching carb intake, are you really eating Tastykakes anyway?

The last question in the case has been answered in the previous section just above, where the list of key concepts from Chapter 2 gave input to the list of things they might have forgotten, and that might hinder the success of the Sensables line.

Update: as of this writing, Tastykake was still selling Sensables products, but with a generic claim of "healthier" rather than a particular low-carb claim, and with the word "Sensables" much smaller on the package. For further updates, check **www.tastykake.com**.

THE LEVACOR HEART PUMP

Chapter 2

The new products process at use at WorldHeart has many similarities to that shown in the chapter. For one thing, it begins with an opportunity identification/strategic planning phase. The external environment suggests an active, older American market that wants a rich, full life, unencumbered by heart disease. Increasingly, we have "medical consumers" that would make the market for heart pumps desirable. Competitors such as Thoratec are showing healthy sales figures for their heart pumps. Due to Medicare changes, increasing numbers of hospitals are doing heart-pump implants, suggesting that the market is still in healthy growth. As far as specific company strengths go, WorldHeart has the Levacor pump, a new category of pump that aids the patient's own heart rather than replacing it. This category is attracting attention, and is at the time of the case in early feasibility trials in Europe and FDA approval in the U.S. is still far off.

Subsequent phases in the new products process need to be pieced together, but there is enough in the case to make some educated guesses. Given the interest in developing a better heart pump, the Medquest team (at the time an independent company, later bought by WorldHeart) did a problem analysis on heart pumps at the time, and identified several areas of concern, primarily size, longevity, gentleness (so as not to rupture blood cells), vibration level, and power requirements. The target was to develop a "destination therapy" pump, meaning one that would never need to be replaced regardless of the age of the patient.

In their search for technologies that could be applied to this market need, Medquest hit upon magnetic levitation technology, which had been used in large applications such as power turbines but never in something small enough to be inserted into a human body. Eventually, they developed a small magnetic levitation system that could be used as a blood pump. It had no moving parts (thus no friction to cause weardown through time), and prevented blood flow obstruction (since the rotor was suspended in air). Additionally, the new technology would yield a product that was substantially smaller than previous heart pumps. Therefore, the new system solved several key problems with existing heart pumps. While we don't know all the details of the idea generation or concept evaluation stages, we clearly see a market need and a technology that addresses the need (magnetic levitation technology), and whether or not WorldHeart used the term "Product Innovation Charter" (see Chapter 3), they are clearly guided by one.

When the product made it to the development stage, Medquest began rapid-prototype development, using CAD software to design the product and then develop a real-size working prototype. They could then test the properties of the prototype by running a blood-like liquid through it. (It should be mentioned here that all of these phases are going to be fully explained in later stages of the course.)

A major difference between this process and the textbook one is that there was apparently little checking with customers (doctors, in this case, as they will make the decision as to which heart pump would be used). In this case, this is not a significant omission, as Medquest and their competitors are obviously on a cutting-edge health technology product designed to replace products with clear drawbacks. In much the same way as the pharmaceutical company seeking a cure for diabetes, the firm here knows instinctively what the marketplace needs and begins with the search for technologies that can be applied and refined to satisfy this need. Students can be pressed to find additional differences.

Uncertainties at the time of launch include: not knowing whether the FDA would ever approve this product, and technologies designed by competing firms that result in even better, smaller, thinner, or longer-lasting pumps. The more successful applications that WorldHeart can demonstrate in Europe, and the more successful the clinical trials are in the U.S., the quicker the FDA approval will be. As far as anticipating competing technologies, certainly the scientists at Medquest would be reading the journals, going to the conferences, and generally networking to keep abreast of technical developments, that might help them in their continued refinements on the Levacor product and might also signal new directions in this technology. Of course, sustaining a cash flow to keep the research going and keep the company in business is essential too; the larger WorldHeart company may be in a better position to sustain the develop through the arduous FDA process than would Medquest.

NEW PRODUCT STRATEGY AT KELLOGG

Chapter 3

A changing business environment may force firms to rethink their strategic emphasis; this can have important implications for new product development planning. Due to trends in cereal consumption, Mr. Gutierrez made long-term plans that would eventually increase the non-cereal component of Kellogg's product mix. At the same time, Kellogg's was (and still is) almost untouchable in terms of cereal brand equity, knowledge of the distribution channel and advertising for cereal, and so on, so looking too far afield in seeking out non-cereal directions seemed counterproductive. He relied on synergistic new product development: line extensions of familiar Kellogg's snacks, and new snack products that are line extensions of familiar Kellogg's cereals. The new corporate policy on products clearly does not focus attention on non-cereals to the detriment of cereal brands, either. The desired sales balance long-term is 50% cereal, 50% non-cereal, and the short-term marketing strategies include boosting sales of familiar cereals with significant advertising and sales promotion, not to mention Web tie-ins.

While student-developed PICs will, of necessity, be quite diverse, all of them should contain some of the abovementioned points in the background section. The focus section perhaps could address how cereal-producing technology might be applied to a new non-cereal product such as a new granola bar, or the Snack 'Ums or Krave products described in the case. Goals and objectives might be more difficult for the students to nail down, especially for specific brands, but these might be stated in terms of how the new brand would contribute to overall cereal (or non-cereal) sales and profitability at Kellogg. Guidelines could include product innovativeness, extent of synergy with existing products, marketing expertise, or technology; how "close" or "far" the line extension is, and many other considerations. Try to get a discussion going about what would constitute a "good" PIC (i.e., one that really would be a guideline for new product development) versus one that is deficient.

A good way to wrap this case up is to go to **kelloggs.com**, and to follow the link to the new products. As of the current writing, the new products showing up on this page are proof of the successful implementation of the corporate strategies outlined in the case. Most of these are indeed snacks which leverage brand equity from existing cereal or snack products (a long list of new Special K products, for example, including crystals to dissolve in water to make a healthy drink, or a Froot Loops cereal "straw").

THE HONDA ELEMENT

Chapter 3

This case illustrates the effective use of product platforms in the auto industry, and also allows the student to infer what the PIC might have looked like. Many companies do product platforming, but in many cases this is almost an afterthought—we have this wonderful product, how else can we use the technology, the components, the manufacturing process? This is bottom-up platform thinking. Honda here illustrates the application of a top-down platform strategy: the goal from the beginning is to build the platform with the idea that many different car models can be built from it over several years. As noted in the chapter, this is basically a requirement in the auto industry, where platform development is prohibitively expensive and the costs must be recovered through time, and possibly across many car models.

As the case illustrates, Honda thinks of new car product development in terms of subsystems, and the case mentions four for the Element: exterior, interior, suspension, and power train. It was important for Honda to get the exterior right; for example, the young, "Generation Y" target market required extra durability. At the same time, the exterior is one subsystem where there was a lot of "from the ground up" new design. The car had to be very different in appearance from the typical Honda, and in ways that would appeal to the prospective Gen Y customer. Thus, little sharing of external features with the existing product line was done, and much new product development effort was focused on the exterior. (In case the class is not familiar with the Element, take them to **www.honda.com** and show them some pictures of both the Element and more traditional-looking Honda cars.) Similarly, the interior needed to be tailored to the need of the target audience, in particular the young driver's need for cargo flexibility and tendency to track mud and sand inside (hence the need for waterproofing and easy cleaning).

Some changes were made to both suspension and drive train subsystems to improve the appeal of the Element to the target market. For example, the existing CR-V chassis was linked with the power steering gearbox used in cars like the MDX, with the result that the Element ran low to the ground, and wide tires were added. The existing 2.4 liter VTEC engine, adapted somewhat to the Element to deliver higher horsepower, was used for the power train. In short, these changes were really adaptations of existing platforms already at use in Honda, and represented a lower cash outlay and less complexity in product development. In fact, the same engine was also used in the CR-V, Acura RSX, and Accord models, showing Honda's focus on platforming. Nevertheless, by sticking to innovation largely around the Element's exterior and interior, Honda was able to produce essentially a very different car with real appeal to its target audience, while at the same time taking advantage of cost efficiencies in the suspension and drive train subsystems.

The parts of a product innovation charter that might have existed for this product, would include some of the following ideas. (Note again, this is the charter that might have existed *at the start of the project* not the thinking at the end.)

Background: Much of the case gives the background. Honda wants to launch a light truck, but with the particular target audience of Generation Y adults, particularly males, about to buy their first car. This market is seen to be lucrative, as it is sizeable and also contains about 52% of first-time car buyers. Honda identified this target demographic as a weakness, as its current line of light trucks sold well to young women and families but it had not broken through into the young male market enough.

Arena (area of focus): The target market needs were clear, especially once the observational research had been done. This was a market that participated in X-Games, identified strongly with its peers, was in favor of social and environmental causes, and was not very career driven. All of these tendencies suggested benefits that could be built into the new product. For example, cargo flexibility would be important for carrying sporting equipment or lots of friends. The car that would satisfy this target market would have to deliver certain benefits: adaptability or modularity, authenticity, functionality, and attitude/expression.

Goals: Probably sales, market share, profitability objectives, in particular with respect to the desired Gen Y market. Since this is the auto industry, there would probably have also been quality goals (low average numbers of major or minor defects per new car sold would result in a very favorable J.D. Power rating).

Guidelines: We could expect that Honda would be focusing on meeting the particular needs of its target customers in all aspects of car development, but in particular with the very visible exterior and interior subsystems. Exterior designers were encouraged to try radical new designs, and check out early sketches with college frat houses, to ensure they were appealing to the desired target without looking like the proverbial spaceship. Interior designers were told to do whatever is necessary to make the interior as flexible, and as easy to clean, as possible. Maximum flexibility ultimately led to ideas such as fold-away seats and a moon roof that permitted standing very long items up on end in the car. Ease of cleanliness was addressed by coating the floorboards with urethane for easy washing, making seat fabrics waterproof, and burying electronics (so that the floor could actually be washed with a hose safely).

What can be learned from the Honda case? There are many opportunities for platforming in order to achieve cost effectiveness, while at the same time avoiding lookalike products. Honda Element development and manufacture was cost-effective due to the savings on suspension and drive train (i.e., research time and effort was focused on aspects that were more important to the final customer), yet the Element is clearly a completely different-looking vehicle from others based on the same or similar platforms. (The Dodge Nitro case, to be seen later in the text, offers another illustration of the same point). Central to successful platforming, however, is to make it systematic and strategic – that is, to plan for top-down platforming just as the car companies seem to do it.

Course Concepts for Part I

We have for a long time handed out a list of key questions or topics at the start of a semester. They are used to guide review at exam time. Some are personal interests, much as yours would be, and the list varies from term to term as our personal interests change, but here are some of those concepts covering Part I.

1. The true rate of new product failure, and why it occurs?
2. Why do people resist innovation?
3. What are the strategic elements of new product development?
4. Why do new products mate technology and market?
5. Sequence of steps in the new product process. What and why?
6. Are services different from tangible products, relative to product innovation?
7. Are industrial products different from consumer products, relative to product innovation?
8. Are radically new products different from close-to-home new products? When do we need probe-and-learn product development, and why?
9. Product Innovation Charter:
    - What it is composed of.
    - How to determine the focus.
    - Innovativeness, etc.
10. Why is there a Miscellaneous category in the section on Goals and in the section on Guidelines?
11. Why opportunity identification is so critical, and difficult.
12. The evolving product.
13. Multifunctionality, the team concept, miniaturized company within a company.
14. Third generation product development.