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A comprehensive coverage of the skills
needed by today's business managers,
from E-commerce to Accounting to
Supply Chain Management

Faculty of the American Management &
Business Administration Institute

Project Director: C.J.Kasis, M.Sc. (Econ) LSE

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Chapter I

The New World of E-commerce

1. What is E-commerce?

We are all aware of the dramatic growth of the Internet as well as of the rapid evolution of its technical infrastructure.

The Internet offers a variety of services, of which E-mail and the World Wide Web (www) are the most popular ones.

Roughly 50% of all adults living in the US access the web, and the percentage in other regions of the world is rising very fast.

The Web offers almost infinite options, from viewing the filmography of your favorite actors to checking stock market quotations. But from an economic point of view, the most important and potentially revolutionary service of the web is **Electronic Commerce**.

Known popularly as *e-commerce*, this facility consists in allowing the selling and purchasing of almost anything, from almost any place of the world to any other place of the world, through the Internet.

2. The e-commerce revolution

Now, why do we use the word "revolution" ? This is in fact a very strong word.

We all heard of the Industrial Revolution (IR). Basically, the IR was a process of *mechanization*: doing with machines, much more efficiently, the same things that were made before by hand: cotton spinning, webbing cloth, making shoes, etc.

Now, was this really a revolution? It can be argued that it was simply an accelerated process of improved productivity. Nothing really new, revolutionary was present.

Peter Drucker maintains that *only the railroads* were the new, revolutionary element in the times of the IR. Allowing people to get in

contact and trade over long inland distances, the railroads were the facility, which motorized the rapid, revolutionary changes of the IR era.

By the same reasoning, the advent of the computer was not revolutionary. The same procedures (invoicing, accounting, etc.) are performed more efficiently with computers. **Only e-commerce** is the really new, revolutionary facility which will produce dramatic changes in the same way the railroads did in the 19th. century.

3. Merchant to Consumer E-commerce

Any person with access to the web can easily purchase books, CD's, electronic equipment, and almost anything from suppliers located in any country. We can compare prices and make rational purchase decisions. It does not matter where we live, and the cost of access to the web is not high.

This part of e-commerce, the selling by merchants directly to consumers is certainly very important. It is growing rapidly, and will cause many changes in the way the traditional **manufacturer to consumer chain** is structured.

Many businesses will simply disappear and others will have to adjust to the new model if they are to survive. Managing a business engaged in producing and/or selling will be radically different.

4. Firm to firm E-commerce

But the most important part of e-commerce, both in volume and in its potential to produce radical changes, is **the firm to firm commerce**.

Businesses will no longer be restricted to the traditional system of selling and purchasing industrial goods. By offering their goods on the Internet sellers of raw materials or industrial goods may reach customers all over the world. And firms will be able to find the best providers of the inputs they need in the same way.

You may imagine how this will affect selling and purchasing organizations in every firm. And, here again, managing a business in the near future will require new types of knowledge and different talents. Just imagine how differently Ford, and the surviving Ford dealers, will have to manage their businesses when:

- *Car buyers will find the car they want at the right price on the web instead of being limited to the nearest car dealership.*
- *Ford will be able to quickly obtain the materials they need to produce cars, at the best price on any given moment, from an unlimited number of suppliers from anywhere in the world.*

Just in case you are wondering when this will happen, the answer is **now**: on November 2nd, 1999 Ford and GM announced that their purchasing operations would be transferred to the web. Both operations will be running early in 2000. All suppliers, business partners and customers from all over the world will be connected.

5. The e-commerce savvy manager

To successfully manage a business in the e-commerce era, all of the traditional skills will still be necessary: marketing, finance, personnel administration, etc. will still be vital.

The additional new skills needed will be:

- A good understanding of how the www works.
- Flexibility of mind to follow (or better, produce) the quick changes which are taking place in this environment. These changes are technological as well as cultural, social and economical.

6. The new mentality

Although the traditional skills will still be necessary, many of the basic assumptions a manager could make until a short time ago will have to change.

Let's look at some examples of concepts that do not work anymore:

- "I can charge a higher price than some of my competitors, based on the fact that the customer has no easy way to find my competitors and look at their prices."
 - *No way!* The web did away with this inability of the customer to compare prices.

- "Since I deliver to the customer's door, they can not purchase from a far-away supplier."
 - *Forget it:* UPS, Federal Express, etc. will deliver door to door in 24 hours from one corner of the world to the other.
- "I can afford a few unsatisfied customers, since they have no way to communicate their complaints to my mass of customers and prospects."
 - *Silly!* One single unhappy customer can post his complaint on the web and let thousands know. *Recently in Japan a buyer of a Toshiba video recorder, unhappy with the way the company ignored his request for service, posted this complaint in the web. He got 6.3m hits a day as other customers added their complaints. Toshiba sued but last June the courts ruled in favor of the customer. The company publicly apologized.*
- "I manage a giant chain of retail stores. No way a competitor can be a menace, the amount of capital needed would be too large."
 - *Ha!* Just look at how Amazon.com put Barnes & Noble in a tight spot in a short time.

7. Why an existing traditional firm *must* sell on the web

An existing firm will probably have to complement (possibly not replace) its business using e-commerce forced by new and existing competitors.

We mentioned Barnes & Noble. This is a traditional, giant chain of bookstores in the US. Amazon.com started as a web retailer of books and soon enough B&N was forced to establish a web store, too. The traditional stock brokers like Merrill Lynch are, reluctantly, trading shares on the web (at much lower commissions than they charge for the conventional service) forced by low cost web brokers as E-Trade.

The traditional shopping mall is not going to disappear, but is certainly under siege. Are the owners of the malls worried? At least one of them is. The Wall Street Journal reported that the owners of The Saint Louis Galleria, a 170-store mall, prohibited that the tenants who operate the stores advertise the sale of their products on the web.

8. The opportunities for start-ups

Imagination is the limit. From an ambitious objective of competing head to head with the giants (as Amazon.com does) to a housewife wanting to sell hand-made dolls, all is possible with e-commerce.

Establishing a business like Amazon.com still costs a lot of money, although much less than opening 500 or 1000 traditional stores. But Yahoo, Amazon.com and many others are offering to sell anyone's wares on the web, no matter how small the volume of sales might be. Many companies, including IBM and CNET Store.com, will open an e-commerce store for you at a reasonable, affordable price.

9. The e-commerce "boutique" vs. the on-line department store

Different strategies are being used in e-commerce. One is to specialize in a particular category. A good example is eToys; as the name suggests, they sell only toys and a few other products for children. On the other hand, Amazon.com, while starting with books, is incorporating a wide variety of products. The very nature of e-commerce allows these very different strategies to be successful.

10. Time for a Review

Which are the conclusions?

- It is obvious that e-commerce is both a great challenge for existing businesses, and a golden opportunity for start-ups, or for existing firms to grow.
- The traditional managing skills will still be necessary, but new skills and a different mentality must be also present.
- If you are, or will become a professional manager, you will have to acquire those new skills and convert to the new mentality.

And if you plan to manage your own business, this is the best time in history to reach this goal, via e-commerce, no matter how small your available capital; you may even start a company in your spare time. □

Chapter II

Managing and Dealing with People

11. Get people to cooperate with you... but also learn from the reluctant ones and if justified, accommodate them

Effective management makes use of all skills that can be learned at an MBA program. Still, the skill of managing people is the most important one. Obviously this is *because to be effective, a manager needs the cooperation of other people.*

It is relatively easy to obtain cooperation from some people. But sometimes this is not the case, and it can create serious problems if the reluctant person has very valuable skills.

Nora K. is in charge of an Information Systems (IS) department which develops complex computerization projects. One of her subordinates, Peter P., has key technical knowledge but is reluctant to fully cooperate. He frequently disagrees with Nora on technical matters.

What to do? Disciplinary action, threatening with it or any kind of pressure would probably make matters worse.

When confronted with this situation, Nora did what a good manager does in such cases. She tried to learn as much as she could from Peter, and gave in to some of Peter's requests, which were not that unreasonable after all, as Nora realized after better understanding his reasons.

12. Make a solid diagnosis before acting... And first of all, do no harm

A good medical doctor would never write a prescription or perform a procedure without first making a careful diagnosis. Good doctors also have a basic rule: first of all, *never do harm.*

Many managers ignore these principles. At Nora's company, the Personnel manager noticed that some computer programmers frequently arrived a few minutes late. Without consulting with Nora, he

sent them a memo "chewing them out" for their alleged lack of discipline.

What the Personnel manager did not know or did not take into consideration was that these people were working late hours without being paid overtime. They obviously took offense, and two of them resigned. Good IS technical people are in strong demand, another fact the Personnel manager did not consider. As a result of his blunder, one of Nora's key projects was delayed for several weeks.

13. Personality and situation analysis as basis for a solid diagnosis

The two elements of a good diagnosis are *personality* and *situation* analysis. In the western culture, there is a tendency to concentrate in the first of those elements.

Nora is a good manager, but one time she made this type of mistake. A systems engineer, Robin, was transferred to her department from another unit of the company. Robin was not performing according to Nora's expectations.

Nora spoke to her boss and demanded that Robin be fired or transferred, claiming that he was "lazy", "not very intelligent", and that his work was not good enough.

Nora's boss read Robin's personal file and saw that his previous bosses had been very satisfied with his performance. He then told Nora to find out whether Robin's poor performance was due to his personality, or to the situation Robin was in.

14. Is the employee "stupid and lazy", or is it the situation?

Nora found out that:

- Robin had been transferred from a small town in the Midwest to his present job in New York. His salary had not been adjusted to the much higher cost of living in NY, an action that had been promised to him when his transfer had been discussed.
- His job description was "Assistant Systems Engineer (S.E)", while *the role* Nora had expected him to perform was that of a Senior S.E.

Speaking to Robin, Nora understood that Robin was distracted by his personal budgetary deficit, disappointed because the company had not given him the promised salary rise, and that he needed more experience and training to become Senior S.E.

Now she realized that Robin's poor performance *was not due to his personality*, that he was neither stupid nor lazy. The problem was *the situation* Robin was in.

15. Roles and the necessary qualifications of the incumbent to perform well

Apart from his money problems, Robin had a role problem.

Roles are positions that can be defined formally or informally. They are described as an aggregate of responsibilities, tasks and expectations on the behavior of the person the role is assigned to. Obviously, Robin mistakenly was given a role he was not qualified to play at that moment.

The role an employee is formally or informally assigned should not be one that for whatever reasons he or she is not qualified to perform well at a given point in time.

16. Nora and Dr. Hume discuss the effect of assigning challenging roles

A few weeks after Nora had correctly diagnosed Robin's problem and corrective action had been taken -adjusting his salary and assigning him the role of assistant rather than senior S.E.-, she attended a party and met with her former Human Resources professor Dr. Hume.

She was very pleased with herself about the outcome of the episode with Robin and she described it to Dr. Hume.

The professor surprised her by saying: "Nora, I still think Robin may be lazy and stupid." When she asked why he thought so, Dr. Hume said: "Nora, you are an MBA. Did I not teach you at Harvard that assigning challenging roles is a proven way to get people to respond with more effort and greater commitment? Robin should have responded well to the challenges of his new job." Nora blushed, hurriedly said goodbye and moved on.

17. Dr. Hume had a point, but...

On the drive back home, Nora reflected on her conversation with Dr. Hume. She had to recognize that apart from being somewhat pompous and patronizing, Dr. Hume had made a good point.

Assigning challenging roles may be an effective incentive for talented and ambitious employees.

But -a very important "but"-, she also knew that to be effective some key conditions had to be fulfilled when assigning challenging roles.

Since she now was convinced that Robin was neither stupid nor lazy, she promised herself to speak to him the following Monday.

18. Challenge your employees... *but*:

- Give them the means to perform well (training, resources)
- Establish clear and realistic goals
- Keep in mind that *rewards* are great motivators

On Monday, Nora interviewed Robin and told him:

- That he would be given specific assignments that were Senior S.E. level, in spite of the fact that Robin was only Assistant S.E.
- BUT -the important but- she added that:
 - He would receive appropriate training.
 - He could count on the support and advice of her and of his more experienced colleagues.
 - If he performed well, he would eventually be promoted to Senior S.E. and get the corresponding rewards.

Nora, being a good manager, understood the importance of the "buts" mentioned in this description of the case.

19. The two very different management styles

Nora had a management style that had served her well in her position of IS manager. She was participative and warm with her subordinates.

She did not bother them with close and constant supervision, and did not expect them to consult with her on every small detail of the job.

She managed by objectives. Those objectives were established by consensus with her subordinates. She tolerated dissent and encouraged people to express their opinions freely.

Nora's friend Bill, supervisor of the mailing room, had a completely different style. He continuously made spot checks on his subordinates' work. He gave them little room for decision taking; their tasks were clearly specified. In short, his management style was performing very tight supervision.

Nora frequently challenged Bill on his management style, assuring him that hers was superior, but she had to recognize that his department was very efficient.

20. Management styles must be different for different situations. A Chief of Staff leading a group of experienced officers can not act like a drill sergeant ... and vice-versa

The reason why both Nora and Bill ran efficient shops in spite of their very different leadership styles is that they managed very different people who performed very different tasks.

The mailroom employees were in general inexperienced due to a high rotation, and by personality dependent. The tasks they performed were simple and routine. In this situation, a tight supervision tends to produce very good results.

In contrast, the Information Systems department Nora was leading was staffed by mature, experienced and skilled people. Their tasks were changing and complex and required considerable creativity and imagination.

In general, under these conditions a warm and participative leadership like Nora's produces better results.

21. There is not a single management style which is always the best

Now, let's speculate on what would happen if Nora and Bill switched jobs. Probably the results would be these:

- If they continued with their customary management styles, they would fail. The mailroom employees would make many mistakes and make unwise decisions. The Information Systems people would be upset, would cease to be creative, and the performance of the department would deteriorate.
- If instead they adjusted to the different types of people and tasks to be managed in their new positions and changed their style accordingly, they would continue to be successful.

A manager must not cling to his customary or preferred style, but must be flexible and quick to adjust to each different situation.

22. The good managers' dilemma: "To be or not to be"... a warm, supporting, participative leader?

However, it can be argued with good reasons that in general, a warm and participative leadership is more effective. People contribute their creativity and make useful suggestions, and take more pride in their work.

So, what is a good manager to do? If he or she is assigned the management of a department like Bill's one, and applies this type of management, we said he would probably fail. If he clings to a tight supervision style, he loses the advantages mentioned above.

A great dilemma. But not unsolvable, at least in part. A good people manager should aim at evolving his department into the type that would work well under Nora's type of leadership.

Hiring better educated people with the right personality traits, training them well, creating incentives for employees to stay longer with the company and rewarding good performance are ways to evolve a group from one requiring tight supervision to one performing more effectively under warm and participative leadership.

23. Check if what you believe is real before acting

Let's go back to Nora's first reactions in the case of Robin. She believed - wrongly- that Robin had been assigned to her department as Senior S.E.

And why did Robin not speak up when confronted with tasks that were clearly above an Assistant S.E.'s capabilities? Because he believed *wrongly*- that Nora was aware of his actual experience and was for some reason putting the pressure on him.

Many people act -or refrain from acting- based on their beliefs before checking if those beliefs are correct.

24. Do not act automatically by habit... and check if others are

Eventually Robin was promoted to Senior S.E., was performing well and became one of Nora's trusted subordinates. One day she asked him:

"Robin, back when you were transferred to here, why didn't you tell me that I was giving you assignments above your capabilities?"

He answered:

"Nora, I was not used to speaking up to my bosses. This attitude had served me well before ".

This dialogue illustrates how sometimes the behavior of people can be explained by habit. Nora was used to her subordinates speaking up to her. Robin was not used to speaking up to his bosses.

It is a good practice to investigate if others -or yourself- are acting based on established habits rather than on a rational reaction to a given situation.

25. The new culture of management-labor relations

Not so long ago, if someone joined a large company, both the employee and the employer assumed that the relationship was going to be for life, or at least for a long term. Under normal conditions, few employees would leave the company, and unless they behaved very badly, employees were rarely fired.

Obviously, such a situation tended to create a bond between employer and employee. It was easy for a company to obtain loyalty from its workers.

In America this culture has changed radically. Today, due to continuing downsizing, re-engineering, relocation of plants to other countries, takeovers, etc., there is very little job security.

26. Why did things change so much?

There are many reasons why this happened. One main reason is "the awakening of the stockholder". Owners of stock realized that the value of their shares was not maximized; they discovered that, to some degree, companies were run for "stakeholders" (employees, managers) rather than exclusively for the owners of the company's shares.

Company raiders realized that many firms had a "hidden value", that they could be worth more than the present value of the shares. They started to make hostile takeover bids, mostly supported by a majority of stockholders. When successful, they fired top management and downsized and/or sold the company in pieces, making a lot of money in the process for themselves and for all shareholders.

Present day top managers are under the constant menace of losing their jobs in such a manner. Therefore, they can not be as considerate to employees as they could afford to be before. They must keep their companies "lean and mean".

They also realized that by negotiating their compensation based on the value of the shares in the market, they could make lots of money by constantly looking for ways to cut costs and make the company more profitable regardless of any other consideration.

27. Only in America?

For cultural reasons, Japan and most European countries resisted this tendency. But the increasing freedom in international trade, a process usually called "globalization", makes it impossible to resist change in the long run. Competition from companies in more efficient areas like America is forcing employers in other regions to copy the American process.

Also, shareholders in those countries are also "awakening" and demanding management to deliver maximum profits and share value.

28. How to Manage and Deal with People under present circumstances

Naturally, most talented employees responded to the new conditions of employment. They stopped being "loyal to the employer" (in the sense of rarely considering switching to a different one) and developed loyalty for their own careers. They did not assume employment for life, but became alert and adaptable to changes in the labor market.

This situation makes it more difficult to retain and motivate talented people. It is no longer possible to motivate them by the long-range prospect of promotions and job stability. Why should a talented person work hard to be promoted and aim at a long-term carrier with a particular employer if at any moment he could be fired?

No easy solution for this problem. Low skill persons may be motivated by the fear of being fired especially when there is a relatively high unemployment rate.

But with talented and highly skilled people it works the other way around: *they must be motivated by the chance of acquiring skills that are valuable in the labor market.*

A skilled person will usually stay with a company and work hard not so much in the hope of advancing in this same company, but in the hope of increasing or maintaining his chance of getting a better job on his own decision or in case of dismissal.

And of course, as stated before, *rewards are strong motivators.* But it is no longer possible to present long-term rewards as motivators; rewards should be immediate or attainable in the short-term. □

Chapter III

Marketing I

29. What is Marketing?

Marketing is the name given to a wide array of functions and actions. They extend from the initial development of a product to the continuous support and follow up of the selling and delivering of the product to the customers.

The key word here is *array* because the many functions and actions we call Marketing are all equally important in reaching the key objective: to make the product (and the business) profitable.

30. A bit of semantics: Marketing and "Marketing"

We must insist on this definition, because in common language the word Marketing has acquired different meanings, being used synonymously with individual functions such as promotion, advertising, etc. Although these functions are parts of Marketing, we must keep in mind that the real technical meaning of Marketing is much more comprehensive.

31. The official definition of the American Marketing Association:

"Marketing is the Process of planning and executing the creation, appreciation, promotion and distribution of goods and services..."

The portion of the *Total Marketing Process* we will describe in this Chapter is composed by the following stages:

- Product Development
- Packaging
- Positioning
- The Target Group

-
- Looking outside: Market, Competition, and Distribution Channels
 - Selling Price
 - Sales Forecast
 - Production Cost

32. Product Development and Positioning

To develop a product is to define what it will be. We have here many different meanings of the word "develop". It can be a totally novel invention, as the Polaroid camera and the Xerox copier were. Or it can be "a better mousetrap", meaning another slightly modified version of a well-known product or service.

In the case of consumer products a very important part of the development is the design of the packaging. No matter how useful and of high quality a consumer product may be improper packaging will seriously hurt sales.

To position the product is to define:

- the way it will be presented to the market, and
- to what type or types of potential customers this presentation will be made: the "Target Group".

Both processes, product development and positioning, are concurrent in some way. Normally we can not develop a product in total isolation, without having in mind to what types of customers we will offer it.

33. Target Group: The people to whom we will offer (and hope to sell) our product

It is possible to define an infinite quantity of different Target Groups. Just as an example: the universe of males, aged 15-25, who practice competitive sports and have a medium to high purchasing power. A Group so defined could be the target of a new model of high tech sport shoes, priced medium to high.

The basic elements when defining a target group for a given product are:

- Can we get these people interested in buying this product?

- At what price will they be willing to purchase it and able to afford it?

34. Oily Inc. ventures into mass consumer products

Oily Inc. is in the vegetable oil business. At one point in time they acquired a maker of soap, McEla. McEla is a "toll packer"; it manufactures soap for other companies that market the product under their own brand names.

Oily Inc.'s management wishes to expand its subsidiary McEla's business by marketing toilet soap under a brand name of their own. To this end, they hire a Marketing manager at McEla, and give him a "simple" task: sell a lot of soap under our own brand, and make a lot of money!

35. McEla has a "product"... but still has to develop it!

Obviously, McEla has the necessary know-how and production facilities because they are manufacturing toilet soap for other companies. In short: they can produce a good toilet soap.

But *marketing* the product is a different thing. McEla must now prepare a strategic plan for their new product line.

The first thing to do is to develop the product (or several variations of the product that form a "product line").

Oops! Didn't we say before that McEla already had a good product? What is to be developed now?

Well, things now get a little complicated, because the same product, "soap", can be presented in different variations: color, fragrance, additives such as vitamins, etc. And it can be marketed in different sizes and packaging, and sold under a single brand name, or under different ones.

36. Markets and how they are segmented

Each of the different varieties of soap and packaging we can imagine may be appealing to a different "market".

So, what is a "market" after all?

In Economics, it is a place where sellers and buyers "come together", find out about availability and prices, and execute transactions.

For Marketing people, a market it is a group of persons actually or potentially interested in a given product with the purchasing power to buy it at a certain price if sufficiently motivated. We will use the latter meaning to define our "market".

Markets are not homogenous; they are "segmented". This is the nature of markets. The reason is that markets are formed by people, and people have different tastes, spendable incomes and attitudes. Markets may be segmented for rational or for emotional reasons.

Of course there is a total market for toilet soap. But it is segmented. Hotels, for the very rational reason that they need soap to put into their guestrooms, are a market segment interested in a smaller size than households.

For not so rational reasons, sports loving "macho" males will probably not form a market segment interested in a "skin care" type of soap but may be eager buyers of a deodorant soap.

A Market Segment becomes a Target Group when marketing people start the development of a product for this market segment.

Markets are segmented for many reasons and exist in many combinations consisting of: income, habits or values existing within different regions, ethnic origin, age, sex, etc. etc.

37. Marketers and firms love Market segmentation

It is the fact that markets are very segmented that makes the marketing of consumer products difficult, interesting, challenging, and a usually well paid profession. It also offers businesses the opportunity to maximize profits by charging different market segments with the highest price they can command in each of them, for something that may be essentially a single product.

38. Researching Consumer Reactions: the Consumer Panels

Now back to McEla. We left them when they were in the first stages of Product Development. Among the many possible variations of soap,

they will tentatively settle for a few. They will produce samples of those varieties and do some research with consumer panels.

The research consists in selecting groups that are a sampling of a specific market segment, exposing the members to the product - including the use of it- and tabulating their reactions. The process must include the recording of how they like it, how they compare it with the competition, how much they would be willing to pay for it, etc.

A much used technique is blind testing; letting people try and report on a firm's product and similar ones of the competition without the subjects knowing which is which.

Consumer panels can also be used to evaluate alternative brand names. McEla will probably do that, since they are not using any name at this time. They will have to purchase a brand or come up with a new one, but in any case estimating consumer reception will be useful.

39. Selecting the Product, the Target, the Positioning and the Image

When the results of the research are available, there will probably be a lot of discussions and infighting at McEla. Marketing utilizes many scientific tools such as statistics and psychology, but the decision process still leaves room for much intuition and personal opinions of individual participants.

Finally, McEla's management will decide on one or more varieties of soap. We are calling "variety" a specific product formula, size, packaging and brand name. A technical name for each of these "varieties" is SKU, for "Stock Keeping Unit".

For each of these varieties or SKUs McEla will have determined the target group and the estimated range of selling price the consumers would be willing to accept.

They will know how to "position" each variety to the corresponding target group, giving it an "image" in accordance with the values of the target group. If the target group of Brand XX Variety YY is that group of "macho" males we mentioned before, it could be positioned as strongly deodorant, leaving a very masculine scent. The packaging would also be consistent with the positioning.

40. What's going on in the real world? Total market - Competitors Distribution Channels - Preliminary sales estimate

McEla has spent a lot of money by now; most of it focused internally. But this was necessary as a starting point. Now that they have defined what they want to sell and to whom, they must look at the outside world. They will have to find out:

- The total sales in volume and dollars of competitive products made to their target group.
- Who the main competitors are, their percentage of total sales, and selling price range.
- How the main competitors position and promote their products.
- Through which "channels" the product is sold.
- The strength of the competition: financial position, clout with large customers, sales force, and distribution effectiveness.

This information will serve to realistically estimate what portion of the market McEla may aspire to grab, at what price, and how large this slice might be (volume). How to reach these estimates is what makes Marketing more an art than a science!

41. The Volume is related to the Selling Price

For each possible selling price there will be a different sales forecast. The big decision here is whether:

- to aim at higher volume at a lower selling price (and profit per unit),
or
- to aim at a lower volume at a higher selling price and profit per unit.

Most companies will decide for the maximum total profit; that combination of price and volume giving the maximum aggregate profit. This is the correct rational decision on purely economic grounds. Other strategies may be followed for other reasons, like trying to capture a large market share by sacrificing profit in the short term, betting on future higher profitability.

42. The Production cost as a needed input. Unit cost varies with production volume

There is another input we need to perform the calculation described above. This is the production cost. In most cases, the production cost per unit is different according to the production volume. So we have three inter-related variables: selling price, volume, cost (and the resulting unit and total profit).

As an illustration, let's look at two of the many alternatives considered by McEla:

- Unit price \$1, volume 10,000, unit cost \$0.60.
 - Total revenue \$10,000, total cost \$6,000, total gross profit \$4,000.
- Unit price \$1.20, volume 7,000, unit cost \$0.70.
 - Total revenue \$8,400, total cost \$4,900, total gross profit \$3,500.

To be continued...

There is still a lot to do at McEla regarding their Soap Project. But this story will continue in the following Chapter, Marketing II.

In that Chapter we will complete the description of the Total Marketing Process, comprising: The Test Market; Advertising; Promotion; Merchandising; Distribution (placing the product where the customer can buy it); Selling; Evaluating test market results; Follow-up of the product's performance; The Product Manager's job. **□**

Chapter IV

Marketing 2

43. Refreshing the Definition Given in Marketing 1

We defined Marketing as "the name given to a wide array of functions and actions. They extend from the initial development of a product to the continuous support and follow-up of the selling and delivering of the product to the customers. The key word here is array because the many functions and actions we call Marketing are all equally important in reaching the key objective: to make the product (and the business) profitable."

In this Chapter we will complete the description of the Total Marketing Process, describing: The Test Market; Advertising; Promotion; Merchandising; Distribution (placing the product where the customer can buy it); Selling; Evaluating test market results; Follow-up of the product's performance; The Product Manager's job.

44. Brand Names & SKU's

McEla management has finally decided to launch the new soap under a single brand name. After testing several names with consumer panels, they decided to use "Bubbly®TM".

The symbols after the name indicate that they are registered as a Trade Mark. One of either of these symbols is sufficient to protect the brand from being used by anyone but the owner. From now on, the name Bubbly will always be followed by the ®, even in McEla's internal memos and documents.

McEla will market Bubbly® in two different fragrances: "Flower pour Femme" and "Virility pour Homme". Each fragrance will be available in three sizes: large size (which is the smallest!), bath size (the medium one), and giant size (the large one, of course). That's six SKU's, or Stock Keeping Units.

45. The meaning of words used

We can draw some conclusions from what is described above.

From the names used for the two fragrances, which include words in French, we can be sure that Bubbly® will be positioned as a sophisticated product for medium and high-income persons. We can assume it will be priced and packaged accordingly.

Also from the names of the fragrances we know that one is aimed at women, the other one at men.

As for the names of the sizes, they follow a tradition in marketing many consumer products. The words "small" or "medium" are considered to be negative and never used. The smaller size is called "large", and fantasy names such as "bath size" or "giant size" are used instead of medium or large.

46. Test Markets

McEla must now decide if they want to launch the new products on a large scale (say, the whole country, or a large portion of it) or if they would rather do a "Market Test".

A Market Test is the launching of a product in a reduced geographic area, obviously called the "test market".

Why conduct a Market Test? There are several good reasons:

- To minimize the risk inherent in any new product launch.
- To learn and make changes in every aspect (packaging, publicity, distribution, pricing, etc.)
- A Market Test can be useful not only for a new product launch, but also for any major change in an existing product strategy.

- There are also some important drawbacks in conducting a
- Market Test :
- The competition gets an early alert and has more time to prepare countermeasures for a large area launch.
 - It is difficult to define a small area (test market) which is a representative sample of the future large target area. If the test market is not very similar (representative sample) to the larger area, the market test will not be reliable. This includes

many aspects, such as spendable income, tastes, age distribution, types of media available for publicity, distribution channels, etc.)

47. McEla makes a decision on market testing

It's a tough decision, given the important pros and cons. Nowadays there is one more alternative: doing a computer simulation of a market test. Data about the new product marketing plan is input into a "model" of a given test market, and hopefully we get results very similar to a real market test.

Of course, the reliability of the results depends on the quality of the model. Since in the final analysis, we are talking about people and their reactions, a computer model may be very misleading.

McEla's management decided to do a market test in a city of 100,000 inhabitants, which they regarded as representative of the future large target area, the whole country.

48. Promotion, Advertising... and Merchandising!

The word Promotion requires some definition. In general usage, it means every action in favor of a product, including advertising it. But in the jargon of marketing, promotion does not include advertising.

Yes, it is confusing! So, let's resort again to the American Marketing Association definition: "*Promotional activities are those which support advertisement, personal sales and merchandising, helping them to be more effective*".

The definition is very open, but we can imagine some examples: organizing seminars or plant tours for customers, giving away samples of the product to potential consumers at public places, cents-off coupons, etc.

So what is "merchandising"? In the jargon, it means actions to make the product visible, reachable, and attractive to the consumer at the point of sale. How a product is physically located in a supermarket shelves is vital: shelf space, height in the shelf, vicinity to other products, are important factors addressed by merchandising.

49. Advertising. Promotion planning & executing

Once McEla decided to conduct a market test, and selected the test market area, it started the crucial process of planning the promotion and advertising campaign of Bubbly®.

Promotional activities for distributors and supermarkets were planned. An advertising agency was selected and graphic, radio and TV ads were developed. An advertisement budget was prepared, with all details of how the dollars were to be spent among the different types of media.

50. Distribution: do it yourself or contract a third party

Maybe you, as a consumer, had this experience before: you notice ads for a product that entice you into buying it, you look for it at your favorite store... but they don't have it! Very frustrating indeed.

So, a very important factor in launching a product is distribution: the product must be placed where the final customer, the consumer, can buy it.

McEla did the following:

They selected a Distributor for the test area. This company, named Bob's Inc., was to perform the following services for McEla:

- warehousing and
- delivering Bubbly® to the stores where it would be sold to consumers.

McEla decided to perform the selling and merchandising with their own employees, and proceeded to hire and train this staff.

The options for McEla were several; they could have contracted a distributor to perform the selling and merchandising as well. But they decided to contract for warehousing and delivering since they did not want to invest in warehouses and trucks.

On the other hand, they preferred to control the crucial selling activity themselves.

Accordingly, McEla's own sales force would take orders from customers and those orders would be channeled to the distributor for

delivery. Naturally, McEla would keep the distributor's warehouse supplied with Bubbly® six SKU's.

51. Here we go!

Now it seems everything is in place for the launch.

- McEla has produced a quantity of soap according to the sales forecast and delivered it to Bob's Inc.
- They have promoted the product in meetings with "the Trade" (name given to middlemen and/or large retail stores), advising them of the imminent launch and telling them how good it would be for their business.
- They have a trained sales and merchandising staff.
- They have negotiated initial orders from the Trade so that when the ads start to appear the consumers will find the product available at points of sale, and those orders were delivered to the trade. This procedure is called "pipe line filling". The merchandisers have done their best to display the product effectively at the stores.

On Monday, March 1st. the ad campaign starts and McEla's people cross their fingers.

52. Selling

McEla's sales force has several tasks. They must make sure that their customers place orders so that the points of sale are constantly provided with the product for the consumer to purchase. They must also be the "eyes and ears" of McEla in the market, advising about competition activities, customer reactions toward McEla and its competitors, etc.

There are, of course, many types of sales persons. They go from mere "order takers" to very sophisticated technically specialized "advisors", depending on the product and the types of customers. But in all cases, the efficiency of the work force is crucial.

What are the qualities of a good salesperson? This is very difficult to establish, but motivation and ambition are an important part. For that reason, most salespersons are paid on a commission basis.

53. Interpreting the Market Test Results

Everyone at McEla is closely watching the market test. No wonder, since evaluating the results of the test correctly is the key to a successful future launch in a wider market.

The first indication is the size and frequency of the orders from the trade to replenish their shelves. These first replenishment orders make people very happy. However, they may be misleading.

Let's go back to your own experience as a consumer. Surely, you have bought this new shampoo or whatever you saw advertised on TV. You brought it home, and did not like it too much. Or you did, but for some conscious or unconscious reason the next time you went to the store, you purchased your old brand and never again bought the new one.

This happens to a lot of people, and that is the reason why the real first positive indication in a new product launch are not those first replenishment orders from the stores, but the following ones.

The first orders may be influenced a lot by those "one and only" purchases exemplified above. If the following orders are satisfactory, they are usually the result of "repeat" purchases from consumers. The ones who bought the stuff for the first time and went on using it and buying more.

54. Fine tuning for the "Big Bang"

After a reasonable time a "go"/"no go" decision with a large area launch must be taken. Careful analysis of results allows the "fine tuning" of the marketing strategy. Reaction of consumers and the community to the advertisements, relations with the Trade, reaction of the competition, are factors to be added to actual sales figures to evaluate the test.

55. Follow-up of the Product's performance. The Product Manager's job

From its initial launch, and for all its life cycle, the performance of a product must be carefully monitored.

In many companies there is a position called Product Manager for each important brand or product line. The usual line of reporting is to the Marketing Manager. The incumbent's main responsibilities are:

- Monitor production costs and quality control.
- Closely watch the market to make decisions on pricing, special promotional offers, advertising design and campaigns, merchandising, sales force's attitude to the product, etc.
- Check on the distribution chain to make sure that the customers' orders come in and are filled so that the product is always available for the consumer at the points of sale.
- Monitor customers and consumer satisfaction with the product and its supporting "customer service" when appropriate.
- Be an important contributor in the preparation of sales forecasts and production schedules.

As a result of these activities, he is to a high degree responsible for the profitability of the product. □

Chapter V

Strategic Management

56. The task of a Good Manager... Short and long term!

A good manager must not only be effective in the day to day or short term performance of the business or unit under his responsibility. He must also manage for the long run.

For that he must be able to define and implement strategic direction, allocate scarce resources efficiently, organize effectively, and create excellence in his business.

57. What is Strategic Planning?

Nowadays, stating that applying sound strategic planning to a business is the major key to its success sounds like a truism. Not long ago, this was not so obvious. Only in the early 60's the concept of corporate strategy was formally proposed by R.Andrews, C.R.Christensen and E.P.Learned from the Harvard Business School. The kernel of their proposition is:

- Strategy is the aggregate of goals, major policies and plans to achieve those goals.
- The strategies should be clear and specific on the type of business the company is in (or is planning to be in), and what kind of company it is (or is planning to be).
- There are two basic and equally important parts of strategy: formulation and implementation.
- When formulating a strategy it is vital to consider the opportunities existing or developing in the market and the strengths and weaknesses of the company.

58. Defining the type of business. Spotting opportunities existing or developing in the market. The case of Amazon.com

You most probably heard about Amazon.com. This young company was started to sell books on the Internet. It is very successful (in sales, not yet in profits). The basic strategic formulation was very clear: Amazon.com was to be in the business of selling a low-tech commodity -books, through a high-tech medium -the Internet. This idea was a quick response to the "opportunities existing or developing in the market".

59. Defining the Amazon.com company: Low price and convenience for a large number of customers

What kind of company was it going to be? The product they were going to sell is a commodity sold by many other companies from the independent corner bookstore to the giant chain Barnes & Noble. How could they be different?

The answer was low price, convenience and customer service. They would offer:

- Discounts on list prices (up to 30-40%)
- The convenience for customers of buying from their homes and getting delivery at their own doors.
- An amazing number of titles (ca. 3 million) to choose from.
- Hunting down any book a customer demands, including out-of-print titles, through a web of associated used book dealers.
- A website easy to understand, at the same time with considerable depth, including book reviews.
- Courteous and personal treatment of the customer, in spite of the impersonal nature of electronic messaging: thank you notes for orders, quick response to queries, a liberal refund approach for returned merchandise, etc.

60. Strengths and weaknesses

One important weakness is to be an upstart in a relatively new market. Also, it was obvious that eventually the giant bookseller chains would

copy Amazon.com's marketing strategy. The awareness of these realities had to be offset by implementing a strategy, this being *establishing a strong brand identity and a broad base of loyal customers quickly*.

This objective was reached; by the time Barnes & Noble started to sell books online, Amazon.com had amassed a base of 4.5 million customers and the brand name was widely recognized.

Reaching this goal was not cheap; the company is still losing money, and losing more as they sell more. The company, and many investors who are driving the stock price higher and higher, consider this not a loss but an investment.

Amazon.com also invested heavily in acquiring other firms and adding services as "online auctions"; this is offered as an explanation to impatient investors and shareholders who are anxiously waiting for the company to become profitable.

It is clear that Amazon.com is managed "for the long run". It could be argued that Amazon.com could make a profit immediately by cutting costs: reducing the number of titles, downsizing the work force, downgrading customer service, etc. But management obviously thinks that this would be a shortsighted strategy. Alienating its customers would mean failure in the not-so-long run. A couple of quotations from Jeffrey Bezos, Amazon's founder: "Word of mouth is incredibly powerful online; a dissatisfied customer can tell 1,000 people in minutes". "I tell my employees that shouldn't be afraid of our competitors -they are not the ones who give us money. They should be afraid of our customers".

61. Flexibility in formulating and implementing strategy

A corporate strategy targeted at the long run growth in sales and profits must be flexible and adaptable. Since everyone knows that apart from death and taxes the only sure thing is change, this also sounds as a truism. The big question is in what direction should this flexibility go.

Amazon.com recently expanded their strategic plan, based on selling only books, to include music CDs and gifts. They are now leaders in CD sales. They are also moving into the Online Auctions service. In this case, they implemented flexibility by diversifying.

Other companies that are diversified may decide that they would be more profitable by focusing on their main strengths and core business. Being flexible, they respond by selling or spinning off parts of the company.

There is no way to make sure which of this two forms of flexibility is best; it depends on the company and the business or businesses it operates, on the changes taking place in the market, and on the available resources.

62. Efficient allocation of scarce resources

Speaking of available resources, we mentioned before the need of allocating scarce resources efficiently as a must in managing for the long run. And resources are almost always scarce; a company never has an unlimited supply of talented people, money, know-how, etc. Allocating scarce resources has a macro and a micro approach.

63. The Macro approach to allocating scarce resources

The macro approach is aimed at a whole business unit. A business running several different units must decide how much resources it should devote to each of them.

Let's use IBM as a case. Their main units are mainframes, software, medium-range computers, Personal Computers and Servers, Data Communications, and Services. Some of these units are growing and very profitable (Services and mid-range computers), others are stagnant (PCs and servers, Data Communications).

IBM has invested heavily in the PC business, with less than stellar results. Several influential industry analysts are advising IBM to stop investing in development and production in this area, resorting to reselling hardware made by other producers with the IBM brand.

The analysts argue that the resources made available in this way should be invested in the growing and profitable units. Seems IBM is listening; at the time of this writing it sold its data communications division to AT&T.

Every day we read in the papers of companies that divest (sell off) a business unit to invest the money in other units where they have core strengths and better chances of growing profitably.

Who buys those businesses? Mostly, other corporations which think they can achieve synergy with these additions to their own business. The mentioned case of IBM/AT&T is a typical example.

Philip Morris acquired the Kraft food company to diversify away from cigarettes. Kraft had a billion-dollar bakery unit (bread, Entenmann's cakes) which they thought did not fit with their other food units. They sold it to CPC International (later renamed Bestfoods), which merged it with its existing baking business (bread, Thomas English muffins) expecting to reach greater efficiency through synergy.

There is another reason to sell or spin off a business, namely to allow management to focus on its core business.

64. The Micro approach to allocating scarce resources

The micro approach to allocating resources is aimed at specific projects within a single unit. A dynamic enterprise develops many projects internally, and receives proposals from third parties: new products, entry into new markets, better or expanded production facilities, etc.

Most of these projects have merit. But, since available resources are scarce, not all can be implemented.

There is a technical approach of evaluating and comparing projects; and then, there is an intuitive approach based on management's "vision".

The technical approach is based on several methods. Let's consider a project proposing the launching of a new product. It must cover a certain period (say, 5-10 years), and include sales forecast (volume) and the estimated net selling price. This would yield the gross revenue to be obtained.

On the other hand, all expenses must be calculated: investment in production facilities, total production cost, transportation and warehousing, promotion, etc. Subtracting the latter total from the former, we obtain the net cash flow (negative or positive) over the period. Using the same method for competing projects, the ones yielding a higher return on the investment can be identified.

Usually managers look at the results of the technical approach and then evaluate them with the intuitive approach. They may decide to launch a new product which is not the most profitable alternative, for

tactical reasons; to block the entry of a new competitor, to get more shelf space for a specific product line on supermarkets, etc.

On a deeper application of intuition (or business acumen, or vision), a manager may see much more -or less- potential in a business project than the technical method shows. In this way many a hit has been achieved.

In the early 50's hamburger stands were a low profit, atomized industry. Most stores were not very clean, food quality rather poor, customer service almost non-existent. A 52-year-old mixer salesman named Ray Kroc saw a restaurant, which was different. It was clean, serving good quality food efficiently produced and staffed by neat waiters and waitresses. He eventually made a deal with the restaurant's owners to use the name and the business methods. McDonald's was born.

Howard Schultz got himself hired and then bought into a small business in Seattle selling gourmet coffee beans. The common wisdom was that serving espresso coffee was a business for small independent neighborhood stores. Schultz's vision was that there was high potential for a chain serving high quality espressos in an attractive environment and staffed by motivated attendants. He opened espresso bars. You may have visited one of them; the name is *Starbucks*.

These two very successful companies, McDonald's and Starbucks, differed in their strategic direction in one important aspect. The former expanded mostly by franchising; the latter's stores are company owned.

Since managers are human, their intuition is sometimes wrong. IBM was offered the Xerox copier patent, Kodak the Polaroid patent. Both companies rejected the proposals. The inventors went ahead and started their own successful companies. Bill Gates offered IBM a majority stake in his upstart Microsoft; Big Blue was not interested!

65. Organizing Effectively

Defining the organization of a corporation is basically establishing hierarchical functions, stating the tasks each function is responsible for, and deciding at which level of the hierarchy business decisions will be taken.

Some companies are highly centralized, all-important decisions being taken at the top. Others leave considerable room for decision taking at lower levels. Here again, there is no golden rule; it all depends on the type of business, the company's culture, the competition, etc.

Let's use two consumer product companies as an example, Gillette and Bestfoods. Both sell their products in almost every country in the world. But the former sells shaving gear, the latter processed food products (Knorr dried soup, sauces and bouillon, Hellmann's and Bestfoods mayonnaise, among many others). This is an important difference. Gillette's products are basically the same everywhere; consumers have common attitudes towards shaving in any country. On the other hand, tastes in food are very diverse. A soup very popular in Taiwan would not be accepted in, say, Brazil. Argentines like their mayonnaise yellow and heavy, Venezuelans prefer it white and light.

Accordingly, both companies are organized very differently in the area of product development. Gillette develops its products centrally, while Bestfoods leaves product development responsibility and decisions to the affiliates in each country or region.

66. Creating excellence in the business... Why?

Never in the past has the marketplace been as competitive as today. Capital is available worldwide for startup companies, expansions and new product development.

For those goods and services that can be exported, globalization - the fall of barriers to international trade and to capital investment - means that most companies no longer compete just with rivals located in their markets, but with the whole world.

Be it cars, toys, shoes, or whatever, a local producer must compete in price, quality and service with rivals in China, Taiwan, Korea, Germany, you name it. E-commerce via Internet is dramatically growing, allowing customers to look for the best price and quality from

merchants located in any part of the world, regardless of where the buyer lives. In short: *the power has shifted from the manufacturers and retailers, to the consumers.*

Also, for companies whose shares are traded publicly, the pressure of investors for profits is growing. Managers must keep investors happy or see their company's shares (and their own bonuses, and stock options) fall. Or lose their jobs.

These are some of the reasons why creating excellence in the business is a vital task of management. Very simply put, "create excellence or perish".

67. Creating excellence in the business... where?

Excellence (also called "Total Quality") must be pervasive! That is, it must exist in all and every aspect of the business, and must involve employees at all levels.

Day to day operations, strategic planning, adaptability, innovation, product cost and quality, marketing and selling, customer service, etc. must continuously evolve to higher levels of excellence.

Employees from the top manager to the last factory worker, clerk, phone operator, waiter; all of them must work towards excellence in their performance. It's like a symphony orchestra. To give a good concert, the conductor must be excellent, the instruments too, and each and every musician also. One single under-performing player may ruin the show.

In the same way, a rude phone operator service agent may cause customers to go elsewhere. As Amazon's Bezos said, "(online) a dissatisfied customer can tell 1,000 people in minutes".

68. Creating excellence in the business... who?

The inspiration and the driving force to create excellence must come from the top. If the top manager is not convinced of its importance, or does not have the talent to implement it, the company will not achieve it.

If this first condition is met, the tough job of achieving "continuous improvement" can be tackled. As always, the key is people:

- A management team with the talent and conviction to implement excellence must be trained, hired and assimilated at all management levels.
- At lower levels, all personnel must be selected, trained and motivated in accordance with this philosophy.
- Good informal relationships within and across authority levels must be encouraged. There are many good reasons for that, especially because it ensures the flow of information and valuable suggestions to the decision levels.
- Effective controls and measurements must be implemented to monitor the level of excellence. This applies to every aspect, from the quality and cost control of manufactured goods, to the satisfaction of customers of a hotel chain.

69. Vision, rewards, measurements

One effective way to motivate people to reach for excellence is defining and "selling" to all employees a vision of the company's objective.

What do we want to be? The vision Bestfoods has and propagates to all employees at all levels is "to become the best international food company in the world". This is completed by a brief summary of how this objective can be reached.

Also, an effective motivation tool is rewards: recognition, stock options, bonuses tied to performance, etc.

As for measurements, several companies are following the "balanced score card" method proposed by an article in the Harvard Business Review some time ago. Each employee has a list of the tasks he performs, with a measurable objective to be reached in a given period. The results are reviewed periodically and, in many instances, rewards are tied to results.

A novel system to measure performance is EVA[®] (Economic Value Added). This method can be applied to the whole of a firm or to specific operating areas.

It is based on assigning a "cost" to the full amount of the assets of a company: plant, equipment, net working capital, etc. The cost of the assets is based on current interest rates. This cost is compared with a company's or operating unit's profits. The difference is the Economic Valued *Added* to the cost of capital.

Let's assume that a company has \$1000 in assets, a yearly "capital cost" of \$80 at 8% interest rate. If the year's profits are \$120, the EVA is \$40, or an additional 4% over the cost of capital.

This is a simple but revolutionary way to evaluate performance. At first sight the company yields a profit of 12% on asset *value*. Looks nice. However, if you consider that this means only a 4% profit over the *cost* of maintaining those assets, the picture looks different.

As the EVA method started to be used, many managers and shareholders discovered that their satisfaction with the performance of a firm was not well founded. □

EVA[®] is a registered trademark of Stern Steward & Co.

Chapter VI

Accounting

70. Accounting

A popular way of defining Accounting is to call it "Language of Business".

It's not a bad definition, provided that we keep in mind that the "language" is used to describe two different concepts. This is an explanation of each of these two concepts.

Accounting Reports are used to:

- Describe the performance of a business during a specific period. This can be compared with a report of what has happened on a building's construction, *during the months 6 to 12 of 1999.*
- Describe the exact situation of a business at a given point in time.
- This can be compared with a report, similar to a still picture, *of the status of a construction project, at 6.00 pm on December 31, 1998.*

71. Accounting Reports: The Income Statement

The accounting report used to describe the performance of a business during a specific period, is the Income (Profit and Loss) Statement.

On the simple example shown below, it is reported that during the mentioned period,

- sales amounted to \$1,000,
- cost of goods sold was \$600,
- expenses were \$100;
- as result, the Net Income of the period amounted to \$300.

John Smith Inc.		
Income Statement		
for the Year Ending 12/31/1999		
Sales		1,000
less:		
Cost of Goods Sold	600	
Expenses	100	<u>700</u>
Net Income of the period		300

72. Accounting Reports: The Balance Sheet

The Balance Sheet describes *the exact status of a business at a given moment*. A Balance Sheet has two sides: The Assets side and the Liabilities and Equity side.

- The Assets side reports the monetary value of every property or right with a money value.
- Under Liabilities we see the amount owed to third parties. On the example below,
 - Total Assets amount to \$10,000.
 - Liabilities are \$6,000.
- *By definition*, the Equity (Owners Capital) equals the results of subtracting Liabilities from Total Assets. In this cases \$10,000 less \$6,000 = \$4,000. This is why on any Balance Sheet the Total Assets always equals the Total Liabilities and Equity.

John Smith Inc.			
Balance Sheet			
as of December 31, 1999			
Assets	Liabilities and Equity		
Cash	1,520	Notes Payable	6,000
Other Assets	8,480	Equity (Owner's Capital)	4,000
Total Assets	<u>10,000</u>	Total Liabilities and Equity	<u>10,000</u>

73. A more detailed Balance Sheet

On the graphic below we have the same Balance Sheet of the previous item.

Here we see that the Assets are: Cash, Buildings & Equipment, Inventory (goods for sale), Accounts Receivable, and Advance Payments made for goods and services not yet received.

The Liabilities are: Accounts Payable, Other Creditors and a Mortgage.

Under Equity we see the Shareholders capital plus the Undistributed Profit. The Undistributed Profit is calculated by subtracting from the Total Assets (\$10,000), the Liabilities (\$6,000) and the Shareholders Capital (\$3,700). The resultant number is \$300, shown as Undistributed Profit.

John Smith Inc.			
Balance Sheet			
as of December 31, 1999			
Assets	Liabilities and Equity		
		<u>Liabilities</u>	
Cash	1,520	Accounts Payable	3,000
Buildings & Equipment	4,600	Other Creditors	1,000
Inventory	1,100	Mortgage	2,000
Accounts Receivable	2,380		<u>6,000</u>
Advance Payments	400	<u>Equity</u>	
		Share- holders Capital	3,700
		Undistributed Profit	300
			<u>4,000</u>
Total Assets	10,000	Liabilities and Equity	10,000

74. A Cash Purchase: how it affects the Balance Sheet

We said that the Balance Sheet is like a still picture, showing the position (in money terms) of a business at a given moment. If after making a Balance Sheet a transaction takes place, a new Balance sheet made after the transaction would be different from the previous one. Let's look at the example below:

The company takes receipt of merchandise to be sold later for a total value of \$1,000, and pays in cash.

The new balance sheet would show the following changes:

- Cash is diminished by \$1,000, now being \$520.
- The value of the Inventory (Goods to be sold) goes up by \$1,000, now being \$2,100.
- In this case the Total Assets do not change, but the composition does.
- The amounts that changed are shown in blue

John Smith Inc.			
Balance Sheet			
as of December 31, 1999			
plus 1 transaction			
Assets	Liabilities and Equity		
		<u>Liabilities</u>	
Cash	520	Accounts Payable	3,000
Buildings & Equipment	4,600	Other Creditors	1,000
Inventory	2,100	Mortgage	2,000
Accounts Receivable	2,380		<u>6,000</u>
Advance Payments	400	<u>Equity</u>	
		Share- holders Capital	3,700
		Undistributed Profit	300
			<u>4,000</u>
Total Assets	10,000	Liabilities and Equity	10,000

75. A Cash Sale: how it affects the Balance Sheet

We'll now make a cash sale, and immediately afterwards draw a new Balance Sheet including this last transaction.

The company sells the merchandise bought by \$1,000 in the previous transaction. The price it charges is \$1,500 and this amount is received in cash. In the new balance sheet:

- Cash now goes up by \$1,500, to a new value of \$2,020.
- The value of the Inventory goes down by \$1,000, to \$1,100.
- The Total Assets are now \$10,500.
- We recalculate the Undistributed Profit:
 - Total Assets: \$10,500
 - less Shareholders Capital \$3,700
 - less Liabilities \$6,000
 - equals \$800, the new Undistributed Profit.

- Obviously, because of the way this calculation is made, Total Assets must be equal to Liabilities and Equity: \$10,500.

The amounts that changed are shown in blue:

John Smith Inc.			
Balance Sheet			
as of December 31, 1999			
plus 2 transactions			
Assets	Liabilities and Equity		
		<u>Liabilities</u>	
Cash	2,020	Accounts Payable	3,000
Buildings & Equipment	4,600	Other Creditors	1,000
Inventory	1,100	Mortgage	2,000 <u>6,000</u>
Accounts Receivable	2,380	<u>Equity</u>	
Advance Payments	400	Share- holders Capital	3,700
		Undistributed Profit	800 <u>4,000</u>
Total Assets	10,500	Liabilities and Equity	10,500

76. A new Income Statement

Now let's make an Income Statement for the period during which the two transactions took place.

Sales were \$1,500, Cost of Goods sold \$1,000, and as a result the Net Income (profit) of the period was \$500. Notice how the different reports check: in the first Balance Sheet we had an Undistributed Profit of \$300. In the subsequent period (of two transactions) the company made a profit of \$500 as shown in the Income Statement; in the new Balance Sheet the Undistributed Profit is \$800.

John Smith Inc.	
Income Statement	
From 1/1/2000 to today (2 transactions)	
Sales	1,500
less:	
Cost of Goods Sold	1,000
Expenses	0 <u>1,000</u>
Net Income of the period	500

77. Depreciation

In our example we reported Buildings and Equipment as a single number (\$4,600) under Assets.

With a little more refinement, we could report both concepts separately: say Buildings \$4,000 and Equipment \$600.

Obviously no material goods last forever. Some may last more than others may, but all eventually deteriorate or become obsolete (with the only possible exception of land).

Depreciation is a method for reporting the change in value of assets over time.

Let's use the \$600 of Equipment as example, and assume that this particular equipment was purchased one year ago; we paid \$600 for it, and it has a useful life of 10 years.

What must be done in the 10 yearly income statements after the purchase, is

- to include 10% of the original value as an expense; and
- to diminish the *residual value* of the asset by the same amount.

Depreciation is reported as an Expense in the Income Statement. In the Balance Sheet, the value of the depreciated Asset is diminished by the same amount.

78. Cash Flow: is Cash more important than Profit?

The statement that "Cash is more important than Profit" may be somewhat shocking. But there is a lot of truth in it.

Of course, no business can survive over the long run without profits. But a profitable business which does not generate sufficient cash for a given period may be forced into bankruptcy. And upstarts, which normally do not generate profits for a considerable time, could not survive without cash (supplied by investors or by lenders).

All well-run business prepare Cash Budgets (Cash Flow estimates) to make sure that:

- The Cash Receipts allow for the Cash disbursements necessary for continuing operations, or

- Preparations are made to cover the deficit (through loans, increase of capital, sale of assets, etc.)

The cash budget shown below does not foresee a deficit. But if in the following month a sudden increase in sales (or the need to build up inventory) would require more funds for operation producing a cash deficiency, the company would have to take a loan or find other ways to compensate for the deficit.

John Smith Inc.	
Cash Budget	
For the Month of January	
Cash balance on Dec 31	2,000
Plus: forecasted collections from	
Accounts Receivable in January	1,700
Plus: Other receipts	100
Total cash available before forecasted	
outlays in January	<u>3,800</u>
Less: Cash for Operations	1,000
Less: Taxes	300
Less: Other disbursements	300
Total Disbursements	<u>1,600</u>
Cash balance (or deficit)	2,200

79. The Balance Sheet: A Summary

Assets = Liabilities + Owner's Equities. A "still Picture" of the situation of a business at a given moment.

Only elements that can be assigned monetary value can be included. Assets cost money. Where does this money come from? Obviously, either from the owners (capital) or from creditors (liabilities).

It follows that the Liabilities side must equal the Assets side; the Liabilities side explains how the Assets are financed. On the example below, the Assets (an investment of \$10,500) are financed by:

- the Owners (Equity, Capital) to the extent of \$4,500,
- and the rest (\$6,000) by Creditors.

Every transaction changes the Balance Sheet and is reflected twice. We saw that a cash sale increased the cash position and diminished the value of the inventory of goods to be sold.

Profits in our example transactions increased Owners Equity. Of course, transactions causing losses, as well as withdrawals by the owners, whether they come from Undistributed Profits or from Capital, diminish Owners Equity.

John Smith Inc.			
Balance Sheet			
as of December 31, 1999			
plus 2 transactions			
Assets		Liabilities and Equity	
		<u>Liabilities</u>	
Cash	2,020	Accounts Payable	3,000
Buildings & Equipment	4,600	Other Creditors	1,000
Inventory	1,100	Mortgage	2,000
Accounts Receivable	2,380		<u>6,000</u>
Advance Payments	400	<u>Equity</u>	
		Share- holders Capital	3,700
		Undistributed Profit	800
Total Assets	10,500	Liabilities and Equity	10,500
			<u>4,000</u>

80. The Income Statement: A Summary

Reflects the performance of a business during a specific period.

Revenues (sales) less Expenses = Net Income (Profit or Loss).

Expenses can be in the form of an actual cash flow, but also non-cash, as Depreciation.

The word *Income* may be misleading; Cost of Goods sold and other cost items, are always included in full, regardless of whether this cost has already been paid for or payment is still pending. Sales and

other incomes are also included in full, regardless of whether the money has been collected or collection is still pending.

John Smith Inc.		
Income (Profit and Loss) Statement		
For the period y		
Sales		15,000
less:		
Cost of Goods sold	10,000	
Expenses (Operations + Misc.)	1,000	
Expenses (Depreciation)	500	<u>11,500</u>
Net Income of Period y		3,500



Chapter VII

Economics

81. What is Economics?

There are many definitions, and this is the one we consider most comprehensive:

- Economics is the study of how people and society choose to use scarce production facilities to make different goods and how to distribute them among persons and groups for consumption.

Economics used to be called *Political Economy*, and this was a good name, because many of the choices mentioned above are influenced by political conditions.

82. Is it a science?

Perhaps not an exact science in the way physics and mathematics are. Economics, being very dependent on choices made by people, is a behavioral science, overlapping with psychology, sociology and anthropology. But it certainly includes the use of "exact" tools such as statistics and probability analysis.

83. A principle and a concept

Due to the almost universal scarcity of raw materials, labor and capital goods, choosing to produce something means giving up producing something else. This is the foundation of a basic economic principle: the *opportunity cost*. If it is decided to produce good A instead of good B, the opportunity cost of making A is the benefit we forgo by not producing B.

A *caveat*: this is true when practically all people and production facilities are employed. If a substantial portion of labor and capital

goods are idle, we could make more goods without forgoing production of others.

A very important concept in Economics is the *fallacy of composition*: what is a good solution for a person or a group, is not necessarily a good solution for society. If there is a recession, it may be wise for a person who has a job to spend less and save money to build a reserve for the eventuality of becoming unemployed. But if everyone does the same, the fall in demand would worsen the recession, more people would lose their jobs, and everyone would be worse off.

84. Economic Organization

A society, even one composed by only two people who interact economically, must be *organized*. Somehow it must be decided what to produce; who will do what, and how produce should be distributed among members. The basic forms of economic organization are:

- A fully planned economy (the defunct Soviet Union or communist China years ago). All economic decisions are made by the government.
- A pure free enterprise economy, where the government does not make any economic decision.
- A mixed economy. The government makes some decisions and the rest are left to the people.

Almost all economies today are mixed, with varying degrees of government intervention. The tendency, from China to Germany, is for government to leave more economic decisions to the market forces.

The question is, in those areas of the economy where the government does not interfere, who makes the decisions of what, how and for whom produce? The answer is *no one*, unless we accept Adam Smith's concept of the *invisible hand*. In a competitive system of free markets and prices, decisions are made by millions of people acting as consumers and /or producers.

85. The price system

In a free economy everything has a price; labor, raw materials, capital and consumer goods. If more is wanted of a specific good, the price of it

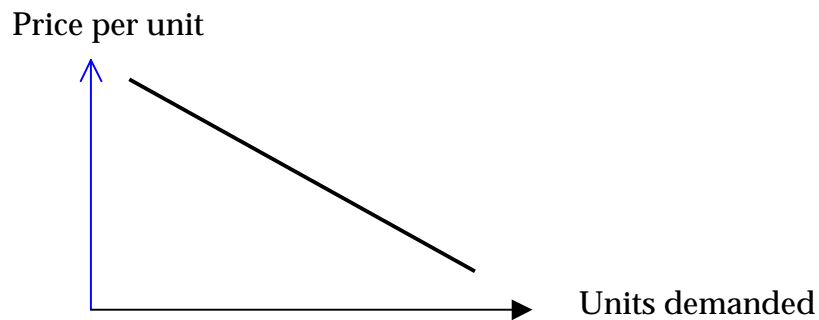
will rise and more will be produced. Investment will flow into facilities to make this good and labor, attracted by better wages, will move too.

The same applies in reverse if *less* is wanted of a specific good. It can be said that in a free market economy, people *vote with their wallets* to decide what, how and for whom.

As the response to an increase (or fall) in demand of a product continues and more (or less) is produced, prices will fall (or rise) again tending to a new equilibrium price.

86. Supply and Demand

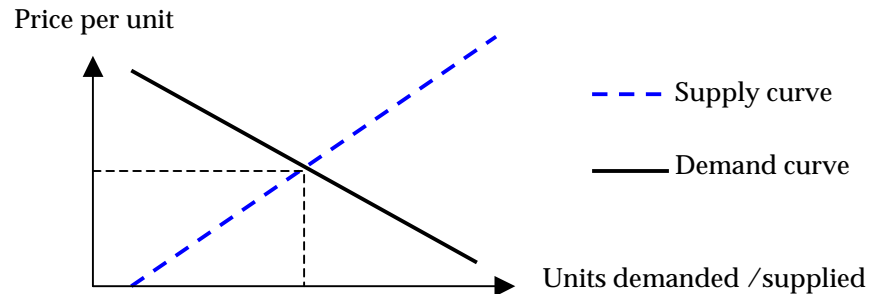
It is a common sense observation that at a given moment people will buy more of a good the lower the price, and vice-versa. This is basically due to the *substitution effect*: as the price of a given good rises, people tend to shift purchases to an alternative good. This is why for products with none or few substitutes and/or fixed amounts consumed by each person (such as salt) demand does not respond to price changes over a large range. For most products, to each given price will correspond a quantity demanded, the *demand schedule*. In graphical form, this is the *demand curve*.



It is also a fact that producers will offer more of a product if people are willing to pay a higher price at a given moment. This is mainly because the *marginal cost* (the cost of producing one more unit after a given level) increases. Why? Overtime, higher wages for night shifts, hiring costs and training of additional workers, depreciation of additional facilities, etc.

We then have a *supply schedule*: for each given price, there is a quantity being offered as supply. In graphic form, this is the *supply*

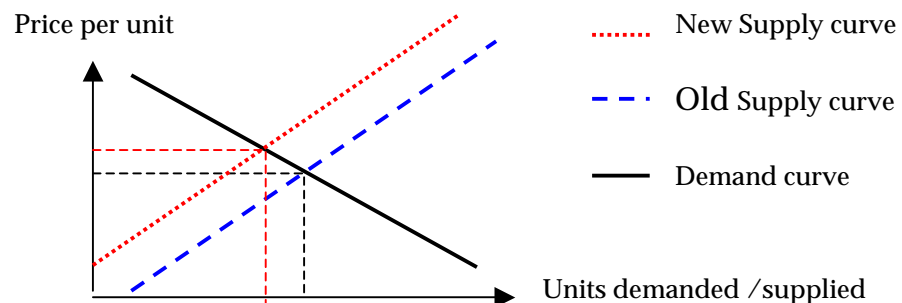
curve. We can draw the demand and supply schedule in the same graphic:



In the short run, the *market equilibrium price and quantity* can only occur at the intersection of both curves. Over a longer period both curves will change. The demand curve will reflect changes in consumer disposable income, tastes, and availability of new products. The supply curve will reflect changes in the costs of inputs, producers leaving or entering the market, technological changes, etc.

A rapid change in the equilibrium may be caused by a tax, for instance a higher tariff (customs duty) on materials for the producers.

They will now be willing to offer a lower quantity at each given price. The supply curve will shift to the left (shown in red). The new equilibrium will occur at a lower quantity than before.



87. Perfection and imperfection

Our elegant analysis of supply and demand only applies to a *perfectly competitive market*. The product is a *commodity* (standard, homogeneous) such as wheat or sunflower oil, or IBM common shares. There are many

buyers and sellers and none of them can affect the price with his transactions. All participants know the current uniform price (bid and ask) as in the commodities or stock markets.

If those conditions are not present, we are in a world of *imperfect competition*. Imperfect competition allows producers to take advantage of an economic fact: they may make higher profits at lower levels of supply.

Let's look into different types of deviations from a perfect market.

- Brand names. The product may be homogeneous and standard (say, sunflower oil) but the consumer *perception* is that brand A is of higher quality than brand X. The producers of A have a *franchise* which allows them to charge a (higher) *premium price* for A. Sure, they will sell a lower quantity the higher the price; but, within a price range, they will make a higher total profit. This is why firms are willing to "invest" in advertising brand names.
- Technological competitive advantage. A firm has a grip on a market because the cost in research and development for a new entrant to reach a competitive know-how is very high. Intel is a good example of this type of situation.
- Oligopoly, meaning very few producers of a given good in the market. Sellers may fix prices at the maximum profit level, illegally by explicit agreements or legally by tacit agreements.
- Cartels, a form of oligopoly, are explicit agreements among producers to fix prices, or more often, to reduce output. They work: when OPEC and most non-member oil exporting countries reduced output in early 1999, the price of crude almost tripled from \$10 a barrel to \$29 at the end of the same year.
- Monopoly, a single supplier in the market. Of course a monopolist can maximize profits by fixing prices or the quantity supplied. Some industries are considered "natural" monopolies: local phone, electricity and gas companies for example. In those cases the government usually regulates the monopoly in such a way as to avoid the intrinsic evils of this situation, usually by fixing maximum prices

88. A positive tendency

The evil effects of all forms of imperfect competition are decreasing.

- The power of brand names is being reduced by the popularity of supermarket private labels which consumers tend to perceive as comparable in quality with higher priced branded products.
- Liberalization of world trade ("globalization") allows more foreign competitors entering local markets, reducing the power of oligopolies.
- Technological advances and de-regulation are eating into "natural" monopolies. Wireless and cellular phone service, possibility of local phone service through cable TV lines, several electrical power companies having to share the same wires, etc.

Looking back and taking the USA as example, we can see the beneficial effects of eliminating restrictions in supply.

- The long-distance phone service was quite good and prices apparently reasonable when the old AT&T was a state regulated monopolistic supplier. Many people were against the judicial decision of opening the long distance phone market. However, the result of this action was a much better service at a much lower price than before.
- The airlines in the USA were a state sponsored oligopoly; the government fixed which company could fly to each city and how many passenger seats per month it could offer. The excuse for this was that in free competition prices would fall too much affecting safety procedures. Deregulation resulted in dramatic reductions in prices and, according to the supply and demand principle, lots more people are flying now. There were casualties, of course: PanAm, Eastern Airlines and other carriers could not adapt to the new situation. But the public in general is much better off, and flying is safer than before.

89. National Income Accounting

Here we need to state a few definitions. *Aggregate supply* is the total value of all goods and services produced in the economy in a given period. If we are referring to a particular country, the equivalent and

more used term is *Gross National Product* (GNP). Of course there is also an *aggregate demand*. With this two elements we can draw a demand and a supply curve, where the "price" axis is an index representing a wide range of prices.

Over a period of time, every product and service (GDP) is sold to someone. The "money" from these sales must go to someone, either as salaries or profits. Thus, the Total Value of the Output (GDP) equals Total Income (TI).

This income in turn is either spent, saved or paid in taxes ("Expenditure"). So, $GDP=TI=Total\ Expenditure$ (purchases + taxes + savings).

We may refine the equation a little more by discriminating the different types of incomes and expenditures: Thus

- $GDP = Total\ Income = Total\ Expenditure$
- $GDP = Personal\ Consumption + Business\ Investment + Government\ Spending + (Exports - Imports) = Personal\ Consumption + Taxes + Savings$

When comparing GNP figures over time, changes in the general level of prices must be considered. One way is to apply a "deflator index" to neutralize the effect of price inflation.

If at given moment the aggregate demand rises too near to the maximum aggregate supply (full employment of labor and resources) the result is a general increase in prices, *inflation*. A sizable fall of aggregate demand will tend to produce unemployment and a general fall of prices, *deflation*.

90. Managing the national economy

Ideally, the government must try to keep the economy growing at a "sustainable" rate, as close to full employment as possible without creating inflation.

The two main tools to do this are fiscal policy and monetary policy.

Fiscal policy is the name given to the criteria used in collecting taxes and spending the revenue. Roughly, it is possible to modify aggregate demand by

- Lower taxes and/or increased spending to stimulate demand, or

- Higher taxes and/or diminished spending to lower demand.
- Monetary policy is the name given to the criteria used to modify the total money supply of the economy and manage the level of interest rates. Roughly, it is possible to modify aggregate demand by:
- Changing the supply of money in the economy by buying or selling government bonds in the open market.
 - Selling fixed interest rate bonds at lower prices will encourage banks to buy them, leaving less money available for private loans. The result is a rise in interest rates and a fall in aggregate demand.
 - Re-purchasing the bonds will have the opposite effect: more liquidity for the banks, a fall in interest rates, and an expansion of aggregate demand.
 - The Central Bank (in the US, the Federal Reserve, or FED) is the "lender of last resort", making overnight loans to banks. Modifying the interest of this loans will make money cheaper or dearer for banks, which will in turn lower or increase the interest rates they charge to their customers.

91. Real and nominal interest rates: the effect of inflation

Many people, including business owners and managers, tend to confuse nominal and real interest rates.

How much interest am I collecting on a 6% Treasury bond? Obviously, 6 dollars a year for each \$100 face value of the bond. This looks as a truism, but it may not be true. The actual purchasing power of the \$6 is affected by inflation. If inflation runs at 3% a year, the *real* interest I am collecting is 3%, in spite of the fact that the *nominal* interest rate of the bond is 6%.

Whether a firm or person borrows or lends money, calculations on the cost / benefit of the decision should be made using the real interest rate rather than the nominal one. □

Chapter VIII

Probability, Statistics and the Time Value of Money

92. The challenge of uncertainty

There is an old saying stating that the only sure things in life are death and taxes. In fact, uncertainty is the most prevalent condition in life. No matter which type of decision we must make, we are really never sure of the outcome.

Although it is impossible to be completely sure of what will happen if we take a given decision, it is possible to estimate the *likeliness* of a certain outcome.

Probability is the chance that something will happen. To determine the probability of something occurring, we collect data and organize them: this is *statistics*.

Using these two tools, probability and statistics, we may quantify the uncertainty before taking a decision. When issuing a weather report, forecasters never say: "it will rain later today". They may say "75% chances of rain later today". They are able to say this because they have collected statistics for a long time, and they know that when current weather conditions were present, 75% of the times it rained.

It's up to you now to make a decision whether to go on a picnic today. You can't be sure, but you know that you are running a high risk of getting wet.

93. Statistics: example and definitions

Let's imagine that you go target shooting. The target has 10 divisions, the center with a value of 100, the external one a value of 10.

You keep *statistics* of your scores. Assume that you shoot 5 times, scoring 20, 20, 45, 75, and 90.

- I. In statistical terms, each shot is an *observation* and each score is the *value* of that observation. In the example, we have 5 observations, with the respective values 20, 20, 45, 75, and 90.

-
- II. The *range* is the difference in value from the highest to the lowest one. In our example the range is 70, because $90-20=70$.
 - III. Your *average* or *mean* is the sum of the values ($20+20+45+75+90 = 250$) divided by the number of observations (5). Accordingly, your average (mean) score is 50.
 - IV. Your *median* score is 45, because you have exactly the same number of scores (2) above (75 and 90) and below (20 and 20) it.
 - V. *Mode* means "fashion" in Latin, indicating something that is common, frequent. In the example, your most frequent score was 20 (you scored it twice); therefore, your *mode* score was 20.
 - VI. Mean (average), Median and Mode are measures of central tendency.
 - VII. There are also values of dispersion, the "spread" of the values of the observations. Your shooting scores showed a lot of dispersion, with a range from 20 to 90. You could have scored the same average (50) with less dispersion by scoring say, 40 40 45 60 65.
 - VIII. The range is one measure of *dispersion* (the spread or narrowness of the distribution). In your second scoring above, your range was 25, from a lowest score of 40 to a highest of 65.
 - IX. Other measures of dispersion are:
 - The *variance*: "the average of the squared distances from the mean to the individual observations".
 - The *standard deviation* (square root of the variance).
 - Standard deviation is a measure of uncertainty: the narrower the spread, the more certainty we have.

94. Probability Analysis

We said before that probability analysis was the tool used to evaluate the chance that something might occur.

A simple example: if you throw a dice, you have 1 possibility in 6 to get a given number (say, a 5). So

- I. The *probability* of you shooting a 5 in a single throw, is one divided by 6 (16.66666 percent).
- II. The *distribution of the probabilities* for each number is even, because you have exactly the same chance of getting any number between 1 and 6. This is a *uniform distribution*.

In general, probability distributions are not even. In many instances (but certainly not all) the distributions are similar; there is something called a normal distribution. A graphic display of a *normal distribution* looks like a bell: most occurrences are around the center, with less and less away from the center. The standard deviation is low (a narrow spread).

One example of normal distribution is the height of people. Let's assume that you go to a cocktail party where there are 100 people. Chances are that most people there are close to average height; very few will be very tall or very short.

Now if you were to enter the party with your eyes closed and open them when you talk to the first person, there is a high probability that he or she would be close to the average height of the population.

The conclusion is that in a normal distribution, since the standard deviation is very low (a narrow spread), the certainty of a given outcome is high (in the example, that the first person you meet with your eyes closed be very close to average height).

95. The time value of money

Intuitively we all know that receiving money now is better than receiving it in the future. More rationally, we can make specific calculations.

If we can get a bank to pay us 10% interest a year on a deposit of \$1000, we would have \$1100 a year from now. It follows that, arithmetically, *the present value* of \$1100 to be received a year from now is \$1000. In both cases, we would end up with \$1100 a year from today.

The calculation of the present value of money to be received in the future is necessarily related to the interest rate taken as basis of the calculation.

96. Investment project evaluation: the discounted cash flow method

Applying the concept of the present value of money to be received in the future to project evaluation, we have a useful tool for decisions. A very popular one is the *discounted cash flow method (DCF)*, also called the *time adjusted return method*.

The DCF method consists in calculating *at which interest rate* the aggregate present value of future income *equals the initial investment*.

The value we are looking for is that particular interest rate; when we find it, we call it the *internal rate of return*.

A simple example to illustrate the concept.

Project X		
	Year 0	Year 1
Investment (cash outflow)	1,000	
Cash inflow		1,200
Present value of Y1 inflow		
at 15%	1,043	
at 25%	960	
at 20%	1,000	

By trial and error we found that 20% is the discount rate at which the present value of \$1,200 to flow in a year from now *equals the cash outflow* of \$1,000 today.

By comparing the internal rates of return we may choose rationally among alternative projects. Of course, this information must also be compared with the *probability* that the estimated inflows actually will occur.

If we put the \$1,000 in the bank for 1 year we could end up with \$1,080, an internal rate of return of only 8%. Obviously, it's better to invest the \$1,000 in Project X.

Or is it? Well, in the bank the future inflow of \$1.080 is practically a certainty. What if in Project X there is a 25% probability of the inflow

being just \$1,000, a 0% rate of return? Which alternative would you choose?

Well, this is what managers were put on the earth for: to make tough decisions!

Chapter IX

Finance and Investing

97. Finance vs. Accounting

It is common to confuse finance with accounting. Many accountants, when asked about what they do, answer "I work in finance". Well, this is not exactly true.

Accounting is about keeping track of transactions and reporting the state of a business. Finance is a very different animal. Finance is about *borrowing, lending and investing*.

Finance is not a novel activity. As soon as civilization dawned and people started to produce and trade, *credit* became a necessity, in order to *finance* those activities. Five thousand years ago some forms of credit existed in the Euphrates Tigris area, and banks were active in Egypt some four thousand years ago.

98. Capital Markets

The environments in which transactions related to borrowing, lending and investing take place are called, not surprisingly, *capital markets*.

Participants play many different roles. Firms issue and sell stock (shares) or bonds to raise capital. Governments through their Central Banks borrow or lend money. Institutions and private individuals buy and sell shares and bonds (securities). Brokers act as intermediaries in those transactions, or buy and sell on their own. Banks take deposits and lend this money to firms and individuals. We could call the aggregate of operations taking place in capital markets the *financial system*.

99. The financial system

The financial system has had a bad press for centuries, because if something goes very wrong (and it often does), lots of people get hurt.

But still the financial system provides vital services for maintaining economic activity and fostering long time growth.

Almost every person must participate at some point in life. It would be almost impossible to spend a lifetime without borrowing and saving at some time or other. In fact, in the last decades there has been an explosion in the volume of financial transactions and in the quantity of people who participate. Half of US households own shares through retirement plans, mutual funds or directly.

The cost of transactions has fallen dramatically; the latest development being the web based stockbrokers who charge very low commissions compared with the traditional firms.

100. Financial Instruments

There are hundreds of financial instruments today, and the number is growing as new ones are invented. But basically all fall into one of two categories:

- Instruments representing ownership of some concrete asset. Bank Certificates of Deposit represent actual ownership of money. Shares in a firm represent part ownership of that business. Bonds represent ownership of money to be collected in the future
- Instruments *not* representing ownership of concrete assets. They are called *derivatives* since their value derives of some other element. *Futures* are contracts to sell or buy a commodity or shares in the future at a given price. The holder of a *future call option* on a stock does not own a concrete asset, he or she has the right to buy the stock in the future at a certain price. *Stock index options* are bets on the up or down movement of a specific index (Dow Jones, Standard & Poor's 500, etc.)
- There are also *mixed* instruments. In the US some banks offer Certificates of Deposit which, apart from guaranteeing the reimbursement of a fixed amount of money in the future, include the option of collecting an additional amount if some stock index (say, the Dow Jones Industrial) rises more than a certain percentage.

101. Bank deposits

- I. **Checking accounts.** The customer "lends" money to the bank by making deposits and can draw checks against this money. Usually the bank pays no interest on checking account balances. The bank is committed to honor the checks when presented.
- II. A checking account can also include the right of *overdraft*, allowing the customer to write checks against credit given by the bank.
- III. **Savings accounts** pay interest and the customer has the right to withdraw all or part of his or her deposit at any time.
- IV. **Certificates of Deposit (CDs)** are a loan to the bank for a fixed period at a given interest rate. The bank pays back principal and interest at the end of the period. The period can range from 7 days to several months. The CDs can be negotiable (transferable to somebody else) or nonnegotiable.
- V. **Money Market Accounts (MMAs)** are a combination of savings and checking accounts. They pay interest (at rates between those of savings and CDs) and a limited quantity of checks can be written. A minimum balance is required

102. Fixed amount obligations.

These are loans taken by the issuer carrying the obligation to repay a fixed amount at a given date. They do not include any right to participate in the profits nor in the election of directors in the issuing institution.

- I. **Bonds** are long-term (over 10-year) obligations issued by a government or a corporation. Most are secured either by a mortgage or some other collateral. Unsecured bonds are also called Debentures. They consist of a promise to pay back the principal (*face value*) at a given date or over a period (*installment bond*). Interest may be paid periodically or at the end of the term at *maturity*; these are named *zero coupon* bonds.
 - Bonds usually pay a fixed interest (the *yield*). This means that over the life of the bond, the market price will change depending on interest rates. A 30-year bond with a face value of \$1,000 paying 6% interest will be worth more than \$1,000 in

the market if current interest rates are 5% and less than the face value if current interest rates are 6%. The market price will also reflect *expectations* on future changes in interest rates.

- Callable bonds include a right of the issuer to rescue them (pay back the principal) before maturity. This protects the issuer in case of a large fall in current interest rates.
- Convertible bonds include the right of the bearer to exchange the bond for an asset (usually stock of the issuing corporation) at a given stock price.
- Variable interest bonds pay rates dependent on external variables such as a current interest indexes or inflation. Examples are bonds paying say 2% over the LIBOR (London Inter Bank Offer Rate) or 3% above the inflation rate of a specified index. Market value of these bonds deviates less from face value because they reflect better current conditions.
- The safer a bond the lower the interest the issuer must offer to sell the bond. The safest bonds in the world are those issued by the US Federal Government: Treasury Bonds are issued in 10 to 30 years maturity terms. High-risk bonds are familiarly called *trash bonds*.

II. **Short (less than 1 year) and medium (1 to 10 year) term obligations**

- In the US the Federal Government issues medium term bonds called Treasury Notes maturing in 1 to 10 years. Municipalities and corporations also issue medium term bonds.
- Treasury Bills (T-bills) are short-term obligations of the US government issued at 13, 26 or 52 week terms.
- Commercial paper is a short-term corporate loan.
- Banker's Acceptance is commercial paper carrying a bank's guarantee of repayment. It is used very much to finance international trade.

103. Instruments involving ownership rights in a business

These instruments (stock) represent a claim on the assets and earnings of a corporation. There are two basic types of stock:

- Common stock entitles the owner to a proportional portion of the corporation's profits (dividends) and to vote to elect the directors.
- Preferred stock represents ownership in a corporation and certain priority in the profits. Dividends are fixed, and this makes preferred stock a fixed-income security. Usually this type of stock does not carry voting rights.

The word *share* is used for the minimum unit of stock. If you own IBM *stock*, the minimum you can own is one *share*.

Shares of stock are issued by corporations of which there are two types: private (privately held) and public (publicly held). The shares of private companies are not offered to the general public and are not traded in stock exchanges as the shares of public corporations are. The SEC (Securities and Exchange Commission) supervises public corporations in the US, and there are similar institutions in most countries.

When a privately held corporation wishes to offer shares to the public and have the shares traded on a stock exchange, it makes an IPO. IPO stands for Initial Public Offering and of course requires approval of the SEC in the US.

Shares of public companies are mostly traded on Stock Exchanges, the most famous one being the NYSE (New York Stock Exchange) on Wall Street. There are many others in the US and all over the world.

Buyers and sellers of stock do not act directly in exchanges but are represented by intermediaries, agents called brokers or stockbrokers. The brokers charge a commission for the transactions.

104. Instruments not representing ownership of concrete assets

Derivatives is the name given to financial instruments which do not represent ownership of money, a commodity or parts of a company. This is the field of finance that has expanded more dramatically.

According to many knowledgeable people, the abuse of these instruments is a menace to the stability of the world's finance. It is also argued that they are an important tool in stabilizing financial markets. We will present both sides of the argument later on.

Derivatives are in essence bets on what will happen in the future. These bet can be placed on prices of almost anything: the future price of commodities, stocks, price indexes, etc.

We shall use stock option futures to explain how, why and by whom the bets are placed. We will also analyze the risks and possible gains present in each case, and use IBM stock as an example.

- **Call options.**

- Mr. **A** feels that IBM shares will go up. He does not want to invest money actually buying the stock, so he places a bet on his belief. He *buys a call option* giving him the right to buy the stock in the future at a given price. He pays a price for this option. The money he pays is all he risks. If the IBM stock does not reach the price of the contract (the *strike price*) on the day of expiration the contract is worthless. The risk of the buyer of a call option is limited to what he pays for the option. His potential gain is the difference between the strike price and the eventual higher price of the stock on the expiration date. Suppose Mr. **A** pays \$500 for an option to buy 100 IBM shares at \$100 each 3 months from now. If at that time the stock is worth \$120, his contract will be worth \$20 times 100 shares equal \$2,000. He made a \$1,500 profit, 300% on his investment. What he risked is loosing 100% of his investment of \$500.
- Ms. **B** feels that IBM stock will not go over the strike price, so she *sells a call option* to Mr. **A**. Sure, we say this for simplicity's sake, in practice **A** and **B** don't know each other, they buy and sell options on an exchange through a broker. Anyway, Ms. **B** pockets the \$500 and hopes IBM will not go over the strike price of \$100. If she is right, she made \$500 without investing anything. If she is wrong and the price goes up to \$120, she has to pay up the \$2,000 for Mr. **A**, a loss of \$1,500. There is no limit of the risk Ms. **B** takes when selling a call option, since the amount by which the underlying stock may go up is not limited. Ms. **B** may or may not own the stock. If she does own it, she forgoes the gain she would have realized by the rise in price, since she has to deliver stock now worth \$12,000 for \$10,000.

- **Put options.**
 - Ms. **C** owns 100 shares of IBM stock when the price is \$100. She wants to keep the stock but also fears that it may go down. To be on the safe side, she *buys a put option*, the right to sell 100 IBM shares at \$100 three months from now and pays \$500 for this right. Dr. **D** does not own any IBM shares but he feels the stock will go down. He bets on his belief and also buys a put option as Ms. **C** did. If the stock goes down to \$90, these contracts will be worth \$10 times 100 shares equal \$1,000, a profit of \$500. The potential gain of the buyer of a put option is the difference between the strike price and the actual lower price at the time of expiration, less his investment. The buyer of a put option runs a limited risk, the amount of his investment if the stock stays at or over the strike price of \$100 a share.
 - We now meet Lt. **E**. He is a fighter pilot, he loves taking risks. Since he is pretty sure that IBM will not go below \$100 a share, he *sells a put option* to Dr. **D**., an obligation to buy 100 IBM shares at \$100 each. He pockets the \$500 and buys a new TV set. If IBM stays at or over the strike price, he made a nice profit on zero investment. Should the price go down to \$90, he has to pay up \$1,000 so he lost \$500. The theoretical maximum risk of the seller of a put option is the difference between the strike price and zero, in this case \$100 times 100 shares equal \$10,000 less the \$500 he got for selling the option. OK, the price of a share seldom falls from \$100 to \$0 in a few months, but in volatile markets the seller of a put option runs a considerable risk.

105. Speculation vs. Hedging

Notice that we have two distinct class of investors in the example above. Some are speculators, they simply bet on the chance of a future event. But at least one of them, Ms. **C**, is not speculating. She is *hedging* her investment in IBM shares. She is willing to pay \$500 to be safe from the risk of losing a lot more if the stock should come down substantially.

There is general agreement that hedging investments is good for people and institutions such as mutual funds. Speculators, on the other side, are considered bad guys no better than casino gamblers.

Now, the problem is that if we had no speculators and only hedgers, no one would be in the market to take on those risks that the hedgers are eager to avoid! This is why the pros and cons of derivatives are so debatable. It is true that derivatives and speculators make hedging investments possible. They also stabilize prices and incomes of people involved in producing commodities or processing them. A farmer can sell his future crop at a given price and be hedged against a fall in price. A company using that crop as raw material can purchase an option to buy it in the future and be hedged against a rise in price. An importer can purchase a future option to buy foreign currency and diminish the risk of unfavorable variations of the exchange rate.

On the other hand in today's global markets speculation in derivatives is very intense and may cause or at least worsen economic crises.

106. Financial Institutions

The many different kinds of financial firms acting in the financial market serve basically the same purpose. They are intermediaries who channel funds from savers to borrowers. In that aspect, the financial market is very similar to any other market; supply and demand of a good -in this case, money and financial instruments- are matched.

But financial institutions are different in one sense. They allow savers to derive future income from not spending today, and they allow borrowers to spend today and forgo some income later on. In this way they build a bridge between present and future. By channeling savings to investors, they foster growth.

- I. **Banks and Saving and Loan Associations** take money from savers and lend it to borrowers.
- II. **Mutual Funds** purchase financial instruments (shares, bonds, large CD's) to build a pool and sell "units" of the pool to savers. Apart from channeling funds from savers to investors, Mutual Funds provide additional services:
 - They allow small investors to diversify their investments by spreading the risk among many different securities.

- They provide professional management of a portfolio to medium and small investor who could not afford to pay for them individually.
- III. **Stock, bond and money markets** match sellers and buyers of securities such as shares, bonds, commercial paper, foreign exchange and derivatives. The weight of this type of institutions versus traditional commercial banks is growing; more people or firms are lending and borrowing in the "Capital Market" rather than using banks.

107. The Global Capital Market

Modern communications technology and the elimination of regulatory barriers have created a truly global capital market. Wire money transfers allow the instant movements of huge amounts of funds between countries, currencies and from one investment to another. Large and medium companies of all over the world are traded in several major stock exchanges.

To invest, say in Spanish telecom *Telefonica* or in Peruvian bank *Banco Wiese* you don't have to trade in a Spanish or Peruvian bourse (stock exchange). You buy *ADRs* of those companies right in the NY Stock Exchange. ADR stands for American Depositary Receipt. ADRs represent a given number of shares of the respective foreign company. Also, scores of mutual funds specialize in investing in shares and bonds issued by firms and governments of many countries.

This globalization of the capital market is good in the sense that it channels funds from countries with surplus capital to others where it is scarce and therefore more productive, thus spurring global growth. On the other hand sudden departure of large amounts of capital may cause crises as recently happened in Latin America and Asia. □

Chapter X

Logistics and Supply Chain Management

108. The Supply Chain concept

While none of the components of the Supply Chain is new, the concept has only been recently established. The novelty consists in treating the aggregate of procedures and processes, which go from the acquisition of raw materials to the delivery of goods to customers, as being a single entity. The entity, like a chain, has many components or links. But, like a chain, it can not be stronger than the weakest of its links.

109. The customer as final objective

The "Supply" word of the name refers to the customer. It is the objective of the business to supply the customer with the goods and/or services it sells. So, the final link of the Supply Chain is always the timely delivery to the Customer of goods and/or services of the specified quality.

110. The basic links of a typical Supply Chain

The typical basic links or components of the Supply Chain are:

- Obtaining the necessary raw materials, at the right time, in the right quantity and of the correct quality.
- Producing the goods to satisfy customer demand with the required quality and in quantities that allow timely delivery without creating excessive inventory.
- Delivering to customers where, when and in the quantities they expect according to the terms of sale.

111. The name of the game is interacting

The components of the Supply Chain are intimately related and mutually dependent. If the objective of efficiently and effectively in supplying the customers is to be attained, all procedures and processes must be coordinated with each other.

To get delivery of the right quantity of raw materials at the right time, we must know which finished goods we are expected to deliver to customers, at what time and in what quantity. We must have the plant capacity to produce these goods and the *logistics* in place: warehousing facilities for raw and finished goods and transportation.

Using the name logistic exclusively for warehousing and transportation is coming out of fashion. In most companies it includes *procuring* (the process of purchasing) and the word is more and more used as synonym of the entire Supply Chain.

112. The price of not interacting

Sounds obvious in hindsight, but until recently too many business acted without looking at the Supply Chain as an entity; too many still act this way.

Purchasing, Production, Warehousing, Sales, Transportation function without the necessary coordination. The results: inventory excesses combined with lost sales due to stock-outs of finished goods, production lines idle due to lack of raw materials, too much or too little warehousing facilities, etc.

113. Managing the Supply Chain

There is no doubt that an efficient management of the Supply Chain is very important to achieve efficiency and profitability in a business over the short and long term. It is mandatory to continuously plan and execute the different procedures of the Chain, considering:

- Customer demand (Sales Forecast)
- The production capacity to meet this demand
- The purchasing of the needed raw materials.

- The reception of those materials at the right moment, quantity and quality
- Warehousing and transportation facilities.

114. The customer is King... or should be!

Rule 1: the customer is always right.

Rule 2: when the customer is wrong, Rule 1 applies.

You probably saw this statement if you ever visited a Wal-Mart store. It is a slight exaggeration, but it contains a core of truth that too many businesses have ignored at their peril (unless they have monopoly power).

Most companies nowadays operate in a buyer's, not a seller's, market. This means that they must produce and deliver exactly what the customers demand in competitive conditions of price, quality and timely delivery. In a word, their internal operations must be Customer Driven, or more exactly, Market Driven. They must respond quickly to fluctuations in demand and competitive situations. And to do that, guess what: *good management of the Supply Chain is a must!*

115. The domestic conflicting interests

Good Supply Chain management is a complicated technical problem for businesses that produce many products which include many raw materials for a market with fluctuating demand. But the technical problem can be solved relatively easily with the help of computers and specialized software.

A more difficult part to solve is the human problem. This is not because human managers working on different parts of the Supply Chain are especially bad people; it is due to the fact that, as department heads, they actually have interests that are in conflict with those of the business as a whole.

116. The Production point of view

John Smith is the Production Manager at McEla, the soap manufacturer we use as study case in our Marketing chapters. John is responsible for delivering finished goods (Bubbly® soap) of specified quality at minimum production cost.

McEla produces six SKU's (Stock Keeping Units), that is, combinations of different sizes and fragrances. John has a single production line, which means that each time he changes from making one SKU to another, he must stop production to setup the line for the next SKU. This means lost time, and in turn higher production costs and lower factory efficiency.

117. When the only concern is lower unit production cost...

Since John's bonus increases as his unit production cost goes down, it is no wonder that he always favors very long production runs of each SKU, thus minimizing time lost to setup the line for a change of SKU.

Yes, this also means that finished goods inventories go up, taking up expensive warehouse space and costing money in financing high inventories. But this is not John's problem; he is not responsible for these elements of cost. His only concern is production cost and quality.

118. The more raw materials in stock the better... but for whom?

To keep production running, John also needs to be continuously supplied with raw materials. This is a legitimate need. So John keeps asking the Purchasing department to keep raw materials inventories high.

This is certainly a good way to make sure that he never has to stop production for lack of materials. Also, if not done properly, a good way to waste money invested in excess inventory. But again, this is not one of John's problems.

119. The point of view of Purchasing

Peter Willis, the Purchasing manager, is more than happy to accommodate John. This is because his suppliers give him better prices the larger the orders he places are. And because by keeping raw material inventories high, he minimizes the risk of being blamed for a stock-out of a material if a supplier fails to deliver on time.

Since Peter is rewarded for purchasing at the lowest unit costs, and never causing a production stop for lack of raw materials, he cooperates with John in keeping raw material inventories high; he says "it is a safe and wise policy". Rather expensive in finance costs but not one of Peter's problems.

120. A typical Sales Manager's statement: "I want no stock-outs of finished goods... but don't ask me for an accurate forecast!"

We may add many more examples of this type of situation. Gus Venda is the Sales Manager; he is interested in high finished good inventories so that he never misses a sale. Of course, he is rewarded on a commission basis, and he hates to miss a sale.

Sure, he prepares a Sales Forecast. But the customer not always orders what he anticipated, but some different SKU. Or they order more than he anticipated. With high inventories of the complete line of SKU's, Gus' mistakes in forecasting are of no consequence to sales volume, as would be the case if production and inventories were closely adjusted to his forecasts.

121. The often forgotten key element: the cost of capital!

And who is interested in the bottom line? Well, in most companies, only top management is rewarded and recognized according to the bottom line. Yes, nowadays some companies are becoming aware of the shortcomings of their management incentive systems. They are implementing new ones, the latest one called based on the EVA™ (Economic Value Added) concept. We discussed this concept in the Finance chapter.

An important factor in the overall results of a business is the cost of capital, in the form of owners' property or borrowed money. The self-centered attitudes of the department managers are in conflict with the excessive cost of capital they cause.

122. Everyone has a good point, but the key is Balance!

Let's not make mistakes. John, Peter and Gus have a point; production costs should be as low as possible, customers should receive whatever they order without undue delay. But the name of the game here is *balance*. The conflicting factors must be continuously adjusted and balanced to achieve optimum results, NOT for the parts, but for the whole: the business.

123. Good software helps... but good managers working together are still the key to success

There are "tools" to help getting close to that ideal balance for the conflicting factors; basically software products specifically designed to help manage the Supply Chain. We'll talk about them later. But let's point out here two basic facts:

No software can work alone. A management team is needed that clearly understands the need of reaching the optimum compromise between production costs and efficiency, buying at the best price, satisfying the customer at all times, and the financial cost of investments in inventory and warehousing.

The team must be of the highest level: department heads and, ideally, the General Manager as chairperson. Too often this all-important task is delegated to lower level employees who can not make the important decisions nor negotiate the delicate compromises that are necessary.

124. The first link of the Supply Chain: Sales Forecasting

To quote a famous business executive: "Forecasting is difficult, but forecasting the future... that's impossible!".

**The basic links of
the Supply Chain**

Sales Forecasting
Capacity Planning
Production Planning
MRP

He was joking, of course, but he joked to make a point: knowing in advance what is going to happen in the future is very, very difficult, and many times, impossible. So, why bother to forecast the future sales of a business?

The answer is that it is possible to forecast future sales, while certainly not to the exact figures, with reasonable approximation. We must forecast with the maximum possible exactness, because this is the basis of a good Supply Chain management.

125. Who forecasts, and based on what?

In most companies, the sales forecast is the responsibility of the Marketing people, with input from other departments, especially from Sales. The key inputs they use to reach the final figure are:

- The sales history of the product line and particular SKUs, meaning the sales figures for past periods.
- A projection of the tendencies observed in those periods.
- Pricing, and promotion and advertisement budgets for the period.
- Estimate of the competition actions for the same items as above.
- Foreseen changes in the purchasing habits of the consumers.
- Indirect competition estimate: some products are very different, but one can be easily replaced by the other one (tea vs. coffee, orange vs. apple juice, etc.)
- The expected changes in consumer spendable income; this may not be too important for soap, but certainly for other products like home appliances, TV sets, etc.

126. Using math or software to help in forecasting

As we said, forecasting is not an exact science. A lot of insight, educated guessing and a little bit of luck are needed. But we still can get useful help from specialized software.

Not that the software has any mysterious intelligence; it simply does the calculations which would be too slow and cumbersome to do by hand, applying standard mathematical forecasting methods. These methods, called *time series* apply basically to the analysis of past sales history and tendencies and their projection into the future.

Statistical methods by themselves are *naive models*; the results must be adjusted according to the other non-mathematical elements listed above.

127. The next step

Once we know (or so we think!) how much we will sell of each product during the period or periods we are forecasting, we have the basic input for the Supply Chain management.

The basic links of the Supply Chain

Sales Forecasting
Capacity Planning
Production Planning
MRP

We will call these figures "effective market demand". *Effective* meaning that the customers would not only "like" to purchase the product, but that they are able to.

Once we have these figures, our first concern is finding out if we can timely produce the required quantities. We have to look at our production facilities, a procedure called "capacity planning".

128. Capacity Planning: adjusting our capacity to the sales forecast... or the other way around

The Production management has the responsibility of planning its operations according to the sales forecast. Here we see at once why it is so important to have a good forecast in order to be efficient. There are several actions that can be taken based on a forecast:

- increase capacity

- or to the contrary, limit our sales forecast to our production capacity (which in turn possibly means reducing our promotion and advertising budget)
- negotiate contracts with other manufacturers (Toll packers) if our capacity is insufficient.
- if we have excess capacity, we may increase our promotion and advertisement budget to reach a higher level of sales; or we may reduce our capital investment by diminishing capacity.

All these actions must be initiated long before the actual forecasted period begins, and mean expenditures and/or commitments which may be difficult to cancel. Again; forecasting is difficult, but essential.

129. The Production Plan

Once we have achieved a good forecast, and are sure that we can

The basic links of the Supply Chain

Sales Forecasting
Capacity Planning
Production Planning
MRP

produce the goods or get them from a toll packer, it is time to prepare a detailed Production Plan.

A forecast usually includes an extended range period and is broken down into shorter ones. As an example, we may estimate the total sales for the next 3 years broken down as follows:

- Yearly figure for year 1, 2 and 3
- Quarterly figures for Year 2
- Monthly figures for Year 1
- Year one's first quarter, broken down into weeks
-

Obviously, we may expect higher accuracy in the more immediate periods than in the ones farther away in time. But the long range forecast is needed for projects that take time to implement (say, building a new production line).

For the shorter run, the forecast is needed to prepare a detailed production plan: how much to produce in each period, with which machines or production lines, length of the production runs for each SKU, etc.

Yes, we can use computers for production planning. We can feed the machine a model of our plant, and let it work with our forecast to help us achieve the best possible production plan. Specialized software is available for this task, or a business may develop a model of their unique plant in-house.

130. Material Requirement Planning (MRP)

Based on our production plan, we now can find out which production

The basic links of the Supply Chain

Sales Forecasting
Capacity Planning
Production Planning
MRP

materials we will need, when, and how much of each. This includes all components (or "ingredients") as well as packaging materials and any other element we may need to produce the goods.

This process is called MRP, for Material Requirement Planning.

Done properly and with a good forecast and production plan as a basis, MRP will allow us to keep in stock all needed components. But we will have on hand the quantity we need, and no more. We will get delivery of the components shortly before we use them. In short, we will keep our materials inventory as low as possible without affecting the production plan.

A caveat: the acronym MRP, originally meaning only Material Requirement Planning, is now also used to mean *Manufacturing* Requirement Planning. In the latter sense, it includes both the Plant Capacity as well as the Materials required for a production plan.

131. A very beneficial and useful "Explosion"

Formula Explosion is the name of a procedure which consists in

The Formula Explosion
Formula *times* Quantity
to be Produced =
Gross Material Requirement

multiplying the "formula" of a product by the quantity to be produced in a specific period. The result of the explosions of the individual formulae is consolidated to obtain the total "gross" need of

components. *Formula* is the name given to a list with the quantity of each input needed to produce a unit of final or intermediate product.

A simple example:

- **Our production plan for January calls for making:**
 - 100 T (metric tons) of Crushed Garlic (CG), and
 - 100 T of Minced Onion (MO)
- **The formula for 1 T of Crushed Garlic is**
 - salt = 0.3 T
 - dehydrated garlic = 0.2 T /
 - water = 0.5 T
 - "Exploding" this formula (multiplying it by 100) we get the gross requirements for 100 T of product:
 - salt: 30 T
 - dehydrated garlic: 20 T
 - water: 50T
- **The formula for 1 T of Minced Onion is**
 - salt = 0.3 T
 - dehydrated onion = 0.4 T
 - water = 0.3 T
 - Exploding this formula times 100 we get the gross requirements for 100 T of product:
 - salt: 30 T
 - dehydrated onion: 40 T
 - water: 30 T
- Consolidating the gross requirements for both products, we need:
 - salt: 60 T
 - dehydrated garlic 20 T
 - dehydrated onion: 40 T,
 - water: 80 T

These are the gross material requirements for a specific period.

132. The meaning of *gross*

We call the calculated requirements "gross" because they do not necessarily coincide with the quantities we need to purchase. This is because we may have in stock materials that are available to be used when the January production plan is executed.

Therefore, our next step in managing the MRP part of the supply chain is calculating the net material requirements. These will be the quantities we have to order from our suppliers.

133. How much shall we purchase (order) for the period planned?

We will use the gross requirements for dehydrated onion (40 T) calculated above, as the basis for our next example.

Our materials inventory ledger has the following entries for dehydrated onion:

- The actual physical quantity on hand (60 T)
- The quantity on order from our suppliers (20 T)
- The quantity already committed for specific production plans (60 T)

For each material there is an item called "security stock level". This is quantity always reserved for "emergencies", like a supplier failing to deliver on time, or a sudden change in the production plan calling for higher quantities.

- In our example, the security level of d/onion is 15 T.

134. Calculating the net material requirements

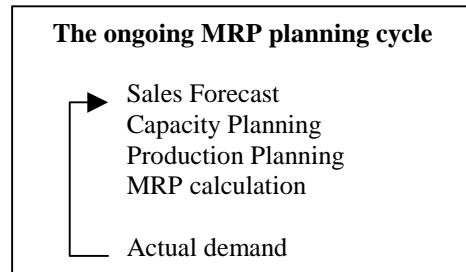
This is the calculation of the net requirements:

- On hand 60T
- *plus* On order 20T
 - = 80T
- *less* Committed 60T
 - = 20T
- *less* Security level 15T
 - = 5T Available

This means that we have 5T available for use in our production plan for January. Since we had calculated a gross requirement of 40T, we need to order 35T for delivery in time for the January plan.

135. The need for frequent revision of plans

Since we must accept that forecasting is, if not impossible, certainly difficult, and that actual sales will always deviate somewhat from our production plan, we should be as flexible as possible in adapting to these deviations.



Understanding the concept that the Supply Chain is an entity of inter-related parts, and realizing that they

should be managed as such, is an important step in achieving that flexibility at minimum cost.

If the process described is frequently repeated according to changes in customer demand, we will be able to adjust production and inventories accordingly.

A good Supply Chain management team, with an adequate software as a tool, will certainly attain important savings in capital costs and other expenses.

136. Computer Software tools

If you think of Boeing or General Motors, you can imagine what it means to efficiently manage the Supply Chain if you have dozens of models, hundreds of thousands of parts, and continuous engineering changes that modify the "formula" of your final products.

But even a company with a much simpler product structure needs the help of computer to accomplish the desired end.

MRP software is available from different suppliers. To name a few: SAP, PeopleSoft, and BPCS from the SSA company.

The MRP software is a part of amore comprehensive software packages offered by these and other suppliers. The name of these packages is ERP, for Enterprise Resource Planning. ERP packages are able to coordinate operations and planning of all and every process of an enterprise.

137. The Just in Time (JIT) concept

JIT is a revolutionary concept. It means that a company will receive the inputs for the production line at exactly the moment when they are needed. No materials inventory will exist. The savings in inventory investment, warehousing and materials handling are obvious.

Since the customer will demand the same, JIT also applies to supplying the customer with products just when they need them.

No need to say that full JIT is very difficult to implement. But competitive pressures are driving most companies to try and get as close to JIT as they can. With the help of computers and a good management team, plus the purchasing power to cajole its suppliers to cooperate, many real-life JIT cases exist today. **□**

Chapter XI

Technology and Innovation Management

138. Know-how and can-do

Technology means knowing how to do something. Every commercial enterprise needs to possess the know-how of some process, no matter how simple it may be. To actively participate in the market know-how must be complemented with the ability to apply the technology, *can-do*.

A firm may have the technical knowledge of a given productive process, but it can not apply it profitably without the means to perform it effectively. Can-do includes availability of trained personnel, capital goods (machinery and installations), and also the means to market the goods.

139. Acquiring know-how

The basic ways to acquire technology are:

- Hire personnel with expertise in the field
- Purchase know-how from other firms through license and/or technical assistance agreements
- Receive it from the manufacturer of specialized equipment installed.
- Perform in-house research and development (R&D)

140. A Technology Strategy

In all firms, from a shoe manufacturer to a chipmaker, some type of Technology Strategy must be in place to stay competitive and spot opportunities.

I. Awareness

- A firm must be constantly aware of the existing and upcoming technologies in its field, be it from external sources or from within the company. The ways to do this are many,

- from scanning trade magazines to attending trade shows to efficiently managing of the in-house pool of know-how.
- II. Assessment
 - Decide which technologies may impact the business.
 - Quantify potential of these technologies to affect the business positively or negatively
 - Analyze the firm's capacity to incorporate these technologies effectively
 - III. Implementation
 - Maintain a priority schedule based on potential cost-benefit and viability.
 - Organize to permit incorporation of new technologies.

141. Invention, creativity and innovation

We must try to define and distinguish between these three activities, which are the motors of technological change. Of course the meanings overlap a lot, but still there are basic differences. A firm must be clearly aware of the differences.

- I. **Invention** means discovering something radically new.
 - To invent something in today's environment is difficult and very expensive. An intensive and costly R&D activity must be present.
 - Many inventions take place "before their time" and can not be implemented profitably in existing market conditions. Normally inventions carry patent protection, but for a limited time only; a long delay in practical application can make this protection useless.
 - In spite of the previous caveat, sometimes an invention can be a hit and be tremendously profitable. We hear of this with certain frequency in the drug industry, carrying familiar names like *Prozac* or *Viagra*.
- II. **Creativity** is devising a novel combination of existing technologies or practices.
 - A new product composed of existing elements (as the first Apple computer)

- An original way to exploit an existing technology (as using the Internet for a new service -i.e., a site publishing and selling "electronic books").
- Creativity can be expensive and involving a lot of high-tech R&D in sub-technologies (as in developing a faster, smaller computer chip) but sometimes it may be cheap and very profitable This happens many times in manufacturing when an employee thinks of an improvement in the production process

III. Innovation can be defined as the practical and profitable implementation of the ideas originated by invention or creativity, "converting ideas into value". In commercial firms, the objective of innovation is to

- Bring new profitable products or services to market
- Improve competitiveness through lower production cost

142. Managing Innovation

Innovative ideas flow continuously to management from external and internal sources. Some may be good, others not as good. The key is, simply put, to identify the ones the company should invest in and eventually implement.

This flow of ideas should be encouraged, never discouraged. The source of all ideas are people. A truism, yes, but frequently forgotten by management.

143. The seeds of innovation

A large proportion of new ideas comes from internal sources. An employee may have an original idea, or may bring up an observation he made at a trade show.

- I. Motivate employees to communicate their ideas. People should be recognized for this, regardless of whether the idea is judged a bright one or a dumb one. No one should ever be criticized for his ideas; no matter what management thinks of a suggestion made by an employee, he should be commended by the simple fact of communicating it.

Good ideas can come from any part of the company. Flow of ideas should not be limited to coming from specialized sources. An idea about a new product or an extension of the product line will probably come from a marketing specialist, But a clerk may also have a useful idea about marketing; after all, he is a consumer too.

Ideally, employees should receive financial rewards for good ideas that are implemented, especially in case of suggestions coming from people not specifically employed for that purpose as R&D personnel. Leading companies as IBM have had this type of programs in place for decades and; while many employees received substantial rewards, the company made lots of money by using the ideas.








Criticism should be postponed. No idea should be discarded at first sight. There should be a systematic approach to evaluate suggestions by a formally organized group or committee.

144. Implementing innovation

Deciding to invest in an innovation is tricky. It is one of the areas where management insight is very critical. Still, some objective factors must be considered.

- I. Ideas are always fuzzy at the beginning. Promising ideas should be "nurtured", thought about, discussed, re-considered.
- II. Innovation should be judged according to its relevancy to the short or long term competitive advantage of the business. The current ideology is that a company should concentrate in its core competency, its "core businesses". So, a good idea may not fit into this policy. Again... the idea may be the kernel of a new core business!
- III. The risks and potential benefits should be quantified. Launching a completely new product is more risky and carries more potential rewards than an extension of an existing product line or a redesigned package.
- IV. Most innovations are relevant to the whole company. This fact is often disregarded and top management coordination is vital. The marketing people may be sure that the new packaging for

mayonnaise is great, but it may be a lot more expensive to manufacture. Decision-making should involve all relevant sectors of the company. Senior management must make sure that good teamwork is practiced.

- V. The resources to be allocated to the innovation project should be realistically calculated.
- VI. Once approved, the project should have a clearly stated method and plan. Timing is crucial in bringing innovations to market; a realistic "critical path" of the project should be drawn and followed-up.
- VII. The project should be clearly communicated and understood.
      Clearly established objectives over time and continuous re-evaluation are vital. Not all projects started are good, since conditions may have changed. Deciding to terminate a project is as important as deciding to start it. 

Chapter XII

International Trade and International Business

145. Theory and Practice of International Trade

From the early days of civilization people have traded. They did it because it was mutually beneficial. The reasons people had for trading in ancient times are still valid today.

International trade has the same rationale as trading between individuals, tribes, modern business enterprises or geographical regions. The obvious cases are:

- A. Some goods simply can not be produced in some parts of the world. Oil, iron, coal and many other commodities are not available everywhere.
- B. Certain crops can not be grown everywhere. Bananas and coffee could be produced in hothouses in Alaska, but at a prohibitive cost.

These are extreme cases of the *principle of absolute advantage*. Some countries can produce goods others can't or could only produce at exorbitant cost. In less extreme examples, a country could produce goods at an acceptable cost, but it is more convenient to import them from other countries that produce them at lower cost.

But even in cases where both countries can produce the same goods, and one of them could produce *all* goods cheaper than the other one, international trade makes sense because of the existence of *relative advantages*.

If country A can produce goods X and Y cheaper than country B, but is more efficient in producing good X than good Y, it pays to specialize in producing X, export it and import Y from country B. The US could produce shoes cheaper than Brazil by investing heavily in automation. But it is *relatively* more efficient if its R&D facilities and available risk capital are used to produce high tech goods instead of shoes.

This paradoxical situation of mutually advantageous trade is explained in many textbooks with a classical example. Let's imagine Dr. K, a successful medical doctor (MD) who is also a very efficient cook.

Why should he employ a cook who is not as efficient as he is in the kitchen? He is a better cook and of course a better MD than any cook.

Clearly, because it is more rewarding for him to employ his scarce time practicing medicine than cooking. He has an *absolute advantage* over the cook both in medicine and cooking, but has a *higher relative advantage* in medicine than in cooking. The cook has an *absolute disadvantage* in both medicine and cooking, but *his relative disadvantage* is much lower in cooking than in medicine. It pays for him or her to cook for the doctor and use his medical services.

This basic theory first enunciated by British economist David Ricardo, is the unshakable foundation of the benefits of international trade. This is why it persists, in spite of special interests as labor unions and local producers. The fact is that trade fosters growth and higher wages in *all* parties participating in international trade.

There is also practical proof of that. Whenever countries restricted international trade, as they did in the late 20's and 30's, growth was very slow. When trade opened after WW II, a dramatic worldwide growth took place. Wages in "poor" countries in Asia, Latin America and the Caribbean are many times higher than 40 years ago, and wages are also higher in the developed nations. Many of the former "poor" ones are now highly developed, as Korea, Singapore, and others.

146. Free trade regions

The recognition of the advantages of international trade has fostered the creation of regional *free trade areas*. The European Common Market, now evolved into the much more ambitious European Union, proved to be highly successful. There is waiting list of countries applying to join.

More recently NAFTA, the North American Free Trade Agreement between Canada, the US and Mexico was established in spite of strong opposition from the US labor unions and some commercial interests.

In Latin America the *Andean Pact* and *Mercosur* are struggling to succeed in spite of conflicting commercial interests in the member countries.

147. Multilateral trade-liberalizing agreement (MLTLA)

"For five decades the world's multilateral trade-liberalisation machinery -known first as the General Agreement on Tariffs and Trade (GATT) and more recently as the World Trade Organisation (WTO)- has in all likelihood, done more to attack global poverty and advance living standards right across the planet than has any other man-made device". This is a quote from *The Economist*, the world's most respected economic newspaper (Dec. 4 to 10 1999, page 74).

In spite of these tremendous accomplishments, the WTO's meeting in Seattle in December of 1999 failed to reach an agreement on further trade liberalization.

What is the reason to have MLTLAs in place? Actually, it would benefit any country to *unilaterally* liberalize trade. Consumers would benefit; producers would be forced to become more efficient and innovative. But trade liberalization has politically powerful enemies; specific vested interests are affected, while benefits are distributed widely in a society. The basic idea of MLTLAs is that by mutually negotiating concessions, lowering barriers to trade would be politically acceptable.

In fact, the economically unnecessary but politically useful WTO did a good job in the past. The failure to reach agreement in Seattle is a bad omen. Basically, what is happening is that governments are more responsive to domestic vested interests, thus taking a "tough line" in asking for "concessions" or refusing to grant them. This is mostly true of the richer countries, and while the US appears at the main culprit, the European Union is not free of guilt, mainly due to its policy of defending its highly subsidized and protected agricultural sector.

148. Multilateral and bilateral trade

Multilateral trade is conducted all over the world or within a free trade region. An importer is free to purchase from the most convenient source

and payments are made in a commonly accepted freely convertible currency (today mostly US dollars and Euros, the European Union's common currency).

Bilateral trade agreements are based on the concept "we buy from the countries that buy from us". Two countries enter into an agreement to conduct a "balanced" trade, each one importing and exporting goods for about the same value. To force importers to buy from the bilateral partner instead of from more convenient sources, differential tariffs, import quotas and import permits, differential exchange rates and permits are in place. This type of multinational trade has very limited benefits compared with multilateral trade, and is falling out of favor.

149. International trade and unemployment

It is a fact that a sudden elimination of barriers to international trade in a country will cause some firms to close down or downsize due to foreign competition. No one except the owners and the politicians they back feels very sorry about that. But since these failing enterprises fire employees, the result may possibly be more unemployment and this is a serious social problem. Theoretically other firms will grow and hire people as they export more, but this process is normally much slower than the former. There is practical proof that in the long run everyone will be better off, but in the short term some kind of "safety net" should be implemented to help the people who can not or need time to adjust to the changes in demand for labor.

150. The balance of trade and the balance of payments

Balance of Trade is the net difference between international payments and receipts resulting exclusively from imports and exports of goods. The *Balance of Payments* includes all payments and receipts, i.e. interest on loans, business transfers of profits, services (insurance, shipping), tourist expenditures, capital movements, gold transfers, etc.

We can observe the following:

- A deficit or a surplus in the balance of trade can be partially or totally offset in the balance of payments due to the non-trade transactions.

- If a balance of payments deficit exists in a totally free exchange environment, demand and supply will drive up the value of foreign currency in terms of the domestic currency (devaluation). The reverse would happen if there were a surplus in the balance of payments. In practice governments try to stabilize the domestic currency but experience has shown that they can succeed only for short periods. If a deficit or surplus situation persists, devaluation or re-evaluation can not be avoided.
- Devaluation of the local currency makes exports cheaper in terms of foreign currency and imports dearer in terms of local currency. This will tend to improve the balance of trade and thus the balance of payments. The reverse will happen if the foreign currency becomes cheaper in terms of domestic money.

151. International Business

We say that a firm conducts International *Businesses* when it does not just engage in international trade by importing or exporting, but when it establishes subsidiaries in foreign countries. These types of firms are usually called *multinationals*.

Operating in foreign countries is more difficult than working in a firm's domestic market. Why do companies invest in foreign countries in spite of those difficulties? Most important reasons are:

- To overcome customs duties and other barriers.
- To take advantage of tax breaks.
- To save on transportation costs of heavy or perishable goods.
- To take advantage of lower labor and raw material costs.
- To invest in utilities (telecoms, gas and electricity, water supply) when they are privatized.
- To seize opportunities to enter a local market by purchasing an established local firm.

Apart from investing in subsidiaries or acquiring all or part of the equity of foreign firms, many firms are merging with foreign companies. This process is accelerating not only in the number of cases

but in the size of the firms involved and in the variety of activities those firms perform.

Few people would have imagined a short time ago that the all-American Chrysler and the all-German Daimler-Benz (Mercedes) would merge and become a single firm, or that the British car maker Rover would be acquired by BMW. These two examples show that there are two basic types of multinational firms. BMW is a German firm that owns a British subsidiary, Rover. Chrysler-Daimler owns subsidiaries too, but its *ownership* is also multinational, American *and* German.

What is the reason of this "merger and acquisition mania", as the press is fond of calling this process? Some of the reasons named above are valid, but in great part the main cause is the falling of trade barriers, the "globalization" of the economy. To compete in open world markets in industries where size is advantageous, firms find it convenient if not necessary to be very large.

152. Likely Competitive Advantages of a Foreign Firm

We may summarize the advantages of a local firm owned by a large multinational over locally owned firms as follows:

- Know-how (technical and managerial)
- Availability of capital for modernization of local plants
- World famous brand names (McDonald's, Coca-Cola, Wal-Mart)

153. Likely problems and risks of operating in foreign countries

Looking at what is happening in the world, it seems that advantages of being multinational offset the disadvantages and risks involved. But certainly we may list some:

- Distance from headquarters.
- Cultural differences: language, customs, religious and ethical values.
- Tax and legal peculiarities of the host country.
- Conflicts with local tax authorities about *transfer prices* (prices paid for imports from the parent company or subsidiaries of the same parent in other countries). This is important because the higher the price paid by the local subsidiary to a foreign source, the lower will be the profits and thus the income tax paid by the local subsidiary.

In theory the local subsidiary could show no profit and pay no income tax, while all profit would be shown at another subsidiary or the home country. The difficulty is that "fair" transfer prices are hard to establish in many instances. How much should Coca-Cola in Uruguay pay for the secret ingredient imported from the US and manufactured by the US company?

- There are also conflicts about payments of *fees and royalties* to the parent company. A fee is a payment for transfer of technology and a royalty is the payment for using a brand name or a patent owned by a third party.

If the third party is not the parent, local authorities mostly accept the payment of fees and royalties. Although these payments diminish the taxable income, they are thought legitimate and necessary to do business.

But the practice is very controversial when the third party is the parent company or a foreign subsidiary of the same parent. Many governments argue that the company is "paying to itself" for technology and brand names with the purpose of lowering the taxes paid in the host country. And the problem is more complicated if there are restrictions on the remittance of profits over a certain percentage on foreign capital invested. Obviously paying fees and royalties to the parent is a way to dodge the restrictions if the company is making more profits than it is allowed to remit.

Conflicts on fees and royalties also arise when the subsidiary is of mixed capital, partly owned by local shareholders. The latter may argue that these payments are a way of shifting profits from the local shareholders to the foreigners.

- Restrictions in transfers (remittances) of profits or repatriation of capital. These are usually based on a maximum percentage of the registered foreign capital.
- Operating in foreign currency carries the risks of losses due to devaluation. It is also difficult to forecast sales and profits in the home-country currency.
- Dealing with corrupt customers' buyers, bureaucracies and judicial establishments. A local firm knows better whom to bribe, and in many instances multinationals are forbidden by laws in their home country to enter into these practices, or may have a stricter internal ethical code than locals.

- Influence of local firms with politicians and media. The local pharmaceuticals in Argentina have succeeded in blocking legislation to protect patents of drugs. They freely manufacture any medicine without paying any royalties to the patent owner.
- Possibility of expropriation.

Sure, foreign investment involves risks related to the country as such (country risk); i.e., the risk of devaluation, inflation, etc., and political risk; i.e. social upheavals, revolutions, etc.

Some scaring examples could be brought up. But in balance, well managed, diversified foreign investment has been historically successful. Most large multinationals started investing in foreign countries many decades ago, well before the word globalization was coined. IBM, GM, Exxon, McDonalds (USA); Nestle (Swiss); Unilever, Shell (UK/Holland); Philips/Norelco (Holland), are but a few famous names. None of these and many other companies would be the giants they are now without investing outside their home countries.

In contrast, Pizza Hut and Domino Pizza could not compete with local parlors in some Latin American countries and abandoned these markets.

The risk of "political damage" (expropriation) is almost non-existent. Restrictions for remittance of dividends or repatriation of capital still exist, but this danger has become much lower; almost every country in the world wants a good image with foreign investors.

The more complicated part of foreign investment is the fact that transactions are made in a currency other than that of the parent company's home country. This is very tricky because exchange rates fluctuate very much. But remaining local is not an easy way out in today's open markets. Caterpillar's implemented a successful project to reduce costs in the US rather than manufacture overseas, only to be confronted with cheaper imports due to the fall of the currencies in which its foreign competitors operate.

154. Exchange-risk control practices

To a certain extent, the risk of devaluation can be offset, but at a price. Deciding when to pay this price is the difficulty found by managers of multinationals. Some of the alternative they face:

- Borrow in the home or in the local currency? For a US company it would be cheaper in nominal interest to borrow in dollars than, say in the Brazilian currency (i.e. 8% vs. 20%).
 - The higher nominal cost of borrowing in Brazil may result in a much lower real cost in dollars if the Brazilian currency devaluates a lot.
 - But if devaluation is low, it may happen that borrowing in dollars is actually more costly
- Hedge against devaluation by purchasing exchange futures or insurance? Again, the convenience of doing this depends on the premium paid for the hedging and the actual devaluation occurring.
 - The obvious answer is making a good forecast of future exchange rates.

As most exercises in forecasting, this is very difficult. Purchasing Power Parity analysis is an attempt to solve the problem. It is based on the assumption that prices of goods in a currency (say, US dollars) will tend to remain stable in another country. Thus, if price of bread in Canada expressed in US\$ rises above historic values, this means Canadian currency is "overvalued" and probably will devalue soon. The most popular, although rather unscientific method is the "Big Mac" index compiled periodically by *The Economist* newspaper. It compares prices of a Big Mac in many countries, expressed in US dollars at the current exchange rates.

Many US companies settle for covering their "exposure" to exchange losses in capital or retained profits. US accounting standards allow them to carry the value of fixed assets at historical dollar cost and not in local currency. This means that in their balance sheet (in the US) they will show the same value independently of exchange rates.

Net current assets are reported at the actual exchange rate and it is here where devaluation might result in heavy losses.

The exposure is calculated basically as follows:

- Inventory value in local currency
- Plus Money receivable in local currency
- Less Money payable in local currency including forecasted profits

- The resulting amount, if higher than zero, is "exposed" to devaluation. Exchange futures or insurance can be purchased for this amount.
- Another possible practice is to push the exposure close to zero by increasing the amounts payable in local currency by borrowing.
- It is also possible, if local authorities allow it, to remit advances on future profits to cover them from possible devaluation. □



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