THE DYNAMICS OF COMPETITIVE SUCCESS AND FAILURE

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ABSTRACT

This paper presents two models of the dynamics of competitive success and failure: the HP model and the T model. It also includes a model of the firm that is convenient for understanding that dynamics. The essence of the HP model is that a firm's continued success requires stretch. An interesting aspect unfolds, as the HP implies that failure will follow success. The T model is an extension of the HP model. Two further elements are added: intelligence (a derivative effect) and memory (an integral effect). A firm behaves today in anticipation of its behavior tomorrow. Intelligence acts positively when the firm accelerates: it will be a catalyst of leverage. However, when growth slows down, intelligence becomes an inhibitor of leverage. Memory starts from the beginning of success. It is memory that makes it so difficult to stretch a company that has achieved its aspirations. It is memory that causes the nemesis, possibly after a couple of cycles of growth. Under the HP model, the ultimate criteria for competitive success is leverage. Under the T model, although resource leverage is still the way to grow, the key to sustained success is the capacity to break the memory effect. Some reflection on accumulated experience is presented, and a series of prescriptive propositions are derived from both models.

Escrevi este texto em Julho de 1993, para Gary Hamel. Agradeço-lhe pelo incitamento que logo me deu, bem como a Alberto Castro, Yves Doz, Diogo Lucena, Costas Markides, C.K. Prahalad e Peter Williamson pela leitura e comentários que fizeram. Sempre me encorajaram a desenvolvê-lo, a prepará-lo para publicação, a prosseguir algumas das linhas de investigação que abre. Para mim, este texto é um marco e, verdadeiramente, um *Working Paper*. Por isso o quero apresentar aqui assim, tal como o escrevi.

But, keeping still the end in view
To which I hoped to come
I strove to prove the matter true
By putting everything I knew
into an axiom.

(Lewis Carroll, *Phantasmagoria*)

FOREWORD

During a lecture in Berlin (1992), Gary Hamel presented a 'simple' slide. The lecture was on the *why* of competitiveness, and served the purpose of presenting the notion of *strategic intent*. The slide showed two firms, Alpha and Beta. Alpha was an example of *slack*: it had modest *aspirations* and large *resources*. Beta was under *stretch*: high aspirations and modest resources. The probable outcome of Beta vs. Alpha was derived and shown to coincide with that of many real firms (e.g. Canon vs. Xerox or Komatsu vs. Caterpillar).

I believe that the relation between *stretch, resource leverage* and *success* is indeed universal, one that is around us all the time. But, often, one can look and not see. The problem is that the 'cowdung' has been pointing elsewhere[1]. Since that lecture, whenever my mind is free (unfortunately not often), I have reflected on it and on several related things. This paper is just a first and brief written rendering of my thoughts.

A few explanations are due. Some of the ideas that I will attempt to develop are mine, in the sense that they result from my own insight into the behavior of firms, in particular, and of organizations, in general. They come from my observation of reality. I have followed Gary Hamel's advice of not doing any specific research in the literature, in order to keep my 'view' as genuine as possible. However, it is certain that much comes from what I have learned over time from the findings of others, even if not

explicitly. Given the restricted use of this paper, I will not worry with providing references or bibliography. Sometimes, I will give examples to prove a point; but I will do so without worrying with the detailed description of the cases involved nor with the accuracy of the data. At this stage of reflection, the level of generality will usually allow it without destroying the value of the proof, should it have any. Indeed, my major objective is that of exploring some models and ideas that may later be detailed and subject to formal research.

I will start with the presentation of what I named the *HP model*. The initials HP stand for Hamel and Prahalad[2]. When introducing the HP model, I will begin with a simple model of the firm, that has evolved while I was trying to articulate my own experience of the relationship between stretch, resources and time. I will then draw, from this experience, an extension of the HP model, an alternative interpretation of the reality of success and failure of firms, the *T model*. The initial T stands for Toynbee. I believe that the dynamics of firms is part of a wider pattern that involves all human organizations[3]. I will also derive, from these models, some normative propositions that are intended to be part of a prescription for a world where competing firms would be 'better'.

It is obvious that the aim of this paper is too ambitious. But, then again, stretch is a necessary condition for success.

Unfortunately, not a sufficient one.

THE HP MODEL

The essence of the HP model is that a firm's continued *success* requires *stretch* (a gap between the firm's *resources* and its *aspirations*), resource *leverage* and perseverance (*consistency* of effort and *constancy* of purpose).

In order to develop the understanding of such basis of strategy, I will start with a simple model of the firm.

The firm can be seen as a set of many different *resources* or *assets*. Managing the firm is managing this 'portfolio' of resources, that include such items as available cash, production capacity, market share and reputation. However, as a manager, I have no doubt in splitting these 'assets' into two separate boxes (let us name them Resources and Position). Here is an example of the difference. Take 'cash' and 'reputation'.

The firm *owns* the 'cash'. I, as the manager, may well decide and do what I please with it (of course within certain constraints). I may use the cash to buy a machine that will produce a new product. When I take this decision and implement it, I am quite sure of the result. Even if there is some uncertainty, it is usually possible to insure against it. This means that our capacity to *control* what happens to 'cash' is large. I have turned 'cash' into 'machine' into 'new product'. I can turn one resource into another into another and so on, knowing what is going to happen as a result of my decisions.

The firm *has* a 'reputation'. I, as a manager, may well decide and act in order to change or use such reputation. However, my capacity to control the reputation is rather limited. For two reasons. Firstly, because this 'asset' lies in the marketplace, not in the firm (i.e. the firm *has* it but does not *own* it). Secondly, because our knowledge about 'reputation' is still rather poor. We may decide to turn 'cash' into 'reputation', eg., by

spending in a public relations program. The objective is to have everybody seeing and believing that "we care a lot about the preservation of endangered species" and, in so doing, stop the decrease of our market share in one of our divisions. If we try to model this transformation process of 'cash' into 'reputation' into 'sales' into 'market share' we will run into a lot of problems. We do not really know how other assets turn into reputation and reputation into other assets, nor do we really know how reputation changes with time or with other variables, such as our competitors' behavior or the acts of a country's government. We may guess, we may have a rough model, we may use our experience or the dominant logic of our business, we may follow our managerial mindset; but we don't really know, nor is there usually a market to insure against such uncertainty.

Many other 'assets' are like cash. Production capacity, R&D capability, proprietary technology, process know-how, organizational systems, employees' experience, managerial skills, accumulated information, brands, and so on. Together they are the RESOURCES available to the firm.

Other 'assets' are like reputation. Brand recognition, market share, distributor loyalty, bankers' trust, relations with government, and so on. Together their are what I would call the firm's POSITION in the marketplace.

At any moment in *time* (**t**), a firm has a certain amount of *Resources* (**R[t]**) and a certain *Position* (**P[t]**) .

The *Resources* available to a company are of different nature and visibility. These resources consist basically of *capital* (financial and physical), *people* and *technical knowledge*. The term technical must be understood in a broad sense. It comprises the accumulated learning about markets, products, technology, processes, and

so on. A part of this knowledge is explicit (e.g. rules, data, patents, marketing research methods, plant layouts, assembly procedures, quality control systems). But most of it is implicit or tacit, and less visible. It is built-in the people that make up the organization. On another axis, this knowledge and skills may be general or firm-specific.

Capital is easier to see and evaluate. A look at a company's balance sheet will give a rather clear indication of the available cash, but a somewhat less valid valuation of such items as plants or equipment. It is also relatively easy to measure the size of the management team and of the work force. But it is difficult to value its capacity to use the capital and knowledge resources.

I see the company's *Position* in the marketplace as composed also of three major parts: *reputation*, *sales* and *influence*. Reputation includes such items as brand awareness[4], perceived quality or credibility. Influence relates mostly to the power of the firm in shaping part of its environment or competitive terms (eg., a state-owned company will usually derive a lot of its position in the market by using its political power and influence the government or a regulator).

The firm's Position can be evaluated in relative terms. We may then speak of relative reputation (a sort of wider concept of *share of mind*), relative sales (the *market share*) and *share of influence*. The position is also not easy to measure, though the company's market share may be a good proxy. The market leader is usually the most 'famous' and the 'strongest'. However, this is almost certainly not true in an non-steady condition. A smaller but fast growing firm may actually become more famous than the stagnated market leader; indeed, people may even think that the smaller firm has the larger market share.

A firm is a system that continuously transforms Resources into Position and Position back into Resources: R→P→R (see Fig.1). It is a dynamic system, where these transformations occur continuously. Both Resources and Position are also transformed *within* themselves with time. Let us see the *transforming functions* one at a time.

Insert Fig. 1 about here

Function **r** transforms Resources into other Resources (eg., cash into equipment, land into cash, patent into product). **r** is management controlled. It is mostly our will and actions that shape **r**. *It is not possible to increase Resources by using **r** alone*, but only to change the mix of resources (R is a vector; with **r** we change the orientation of R but not its size).

r is the field where resource allocation excels. If one knows the future cash flows that result from any piece or mix of resources, then it will be possible to know exactly an optimal shape for **r** (at time t). The 'small' problem is that to know the future cash flows (ie., resources coming back) one must know the other transforming functions **f**, **g** and **p**.

Resources R are transformed into Position P by function **f** (eg cash is spent in advertising that changes share of mind, a new distributor increases market share, the friendship between the CEO and a peer in a competitor allows for an alliance that would otherwise be difficult).

Position P changes 'alone' (ie., outside the firm's direct control) by function **p**,

shaped by the environment. A large part of **p** is the result of our competitors' behavior. We see the results of **p** (often, the problem that we experience in management is that we fail to see them ...) and we may respond with changes in **f**, **g** or **r**. However, **p** is indirectly shaped by us, as part of it is a response (eg., from our competitors) to our behavior (ie., the 'visible' results of our **f**, **g** and **r**).

In a way, **p** has been the field of strategy. "Anticipating industry changes" is knowing **p**. "Fitting opportunities with resources" is using **r** to orient the Resources vector to where **p** is pointing. "Selecting a niche" is choosing an environment where **p** has a smaller effect on P, leaving P more to the firm's control through **f**.

Position P will be changed back into Resources R by function **g** (eg., cash coming from customers, high-skilled employees that join the firm because of its reputation, knowledge that comes from an alliance).

Now that we have this simple model of the firm, we will define *success* for the firm. I understand this to be a long lasting discussion. Some even write that we all know what success is, but can not really say it. What success? Success for whom? Success when?

Surely, success must come from market. Ultimately, the consumer is the umpire of success. If this is so, the measure of success comes through **g**, and it will lead us into considering that a firm is successful when it adds to what it owns, its resources (I believe this to be a good description of success, capable of dealing with the organization survival and the shareholders interests). Hence, success is directly linked with R[t]. *Success means that R'[t] is positive* ($dR/dt>0$). Failure is having $R'[t]<0$. Long term success means that $R[\infty]>R[0]$.

The *Profit* of the firm during period $\{t1,t2\}$ is equal to $(R[t2]-R[t1])$. In this view

of success, profit maximization is not necessary. Keeping profits positive is enough[5].

Another important concept is that of the firm's *aspirations*. We see the use of such words as vision, mission, purpose, goal, intent. Sometimes with the same exact meaning, other times not.

The interesting thing about aspirations is that we usually articulate them in terms of Position, not Resources. And, even stronger, there seems to be empirical evidence that suggests that successful examples point to statements of aspiration that do use the firm's position as the basis for "where we want to go". Such examples include the (by now famous) "beat Xerox" or "circle the Cat" or (the more private) Segafredo's "be the first and no.1 Espresso coffee company in Europe". Probably this is because expressing a goal in terms of Resources carries very little emotional content. We seem to be motivated by 'beating' somebody, in the sense of having a Position that is better than their Position. However, success can not be that. If we end up with a superb Position, having consumed or exhausted most of our resources and not being able to get them back, we will be 'dead' soon thereafter. A very short success, surely.

If success relates to R and aspirations to P, then we need to establish a relation between the two. Let us consider that the positions of the various companies i competing (i=1,...,n) are constant over a long period of time, both in relative and in absolute terms. The value of each position is constant ($P_i'[t]=0$). It is necessary that the value of the resources be constant too ($R_i'[t]=0$). Otherwise one company would get 'richer' that the others and nothing would prevent it from transforming those extra resources into a larger position. Or a company would get 'poorer' and slowly vanish. In such steady conditions, it is clear that each company would have a certain position and a certain level of resources. We would find a precise relationship between R and P in that market. To each

value of P, there is an equivalent value of R. I will call it RE[P], the resources 'equivalent' to a given position in the market.

In the real world things are a bit more complicated because of the time lag between R→P and P→R and because of the changing value of the total market. However, many markets are more stable than what they seem. The changes are relatively slow (i.e. small dRi/dt and dPi/dt) and the resources R of a company with position P can be taken as an approximation of RE[P].

Note that the existence of a relation between R and P (at a *given* moment in time) does not mean there is the same between R and P at *different* moments of time. Indeed, empirical evidence suggests that current resources are not an indicator of future position or vice-versa (and more so, the more distant the future).

Let us now assume that at a given moment (t=0) a company aims at achieving, in some reasonably distant future (t>>0), a position P=A (A for aspiration). It is possible to define a state variable that I will call *Tension* (T):

$$T = (RE[A] - R) / R$$

RE[A] is the resources equivalent to position A and R is the current value of resources.

If T is > 0 than the company is in a state of *stretch*. If T < 0, the company will be in a state of *slack*. If T is 0, the company will be in a state of *rest*.

The basic *HP function* tells us that *a company can only succeed* (i.e. increase R over time) *if it is in a state of stretch*. There is a relationship between the company's performance (R'[t]) and tension (T) - see Fig.2. Note that it is not necessary that the

shape of this function be that drawn in Fig.2; it may be different, eg., a step function with a positive and constant value between T1 and T2 and negative values outside that interval. This is not relevant at this point.

Insert Fig. 2 about here

Below T1 the company is in slack, at rest or under insufficient stretch. Its performance will be negative and its resources will diminish.

Between T1 and T2 the company is under (sufficient) stretch. Its resources R are small compared to those equivalent to its intent. But the company will be able to turn R→P→R in such fashion that it will multiply its resources with time. The company will be performing *resource leverage*. It will do so in different ways.

Above T2, the company will be under too much stretch, and it will not be able to cope with it. The exercise of resource leverage will be ineffective or impossible.

The state of stretch (i.e., sufficient and not excessive stretch) adds two fundamental components of success to the company: *emotion* and *direction*. Emotion is key for effectiveness, keeping everybody constantly alert and motivated. It keeps people's energy consistently devoted to an end. Direction is key for efficiency, minimizing entropy gains, and keeping the transformation of resources as near as possible to the ideal reversible condition.

The basic concept in the HP model is *stretch*. This is the necessary condition. Stretch is not the same as stress (in the physical sense), though some effects can be similar. Stress is the result of an external force or tension (i.e. from the firm's environment). Stretch must be understood (or, better stated, that is how I understand it)

as the result of an *internal* tension. It is an act of self-determination, a response to a challenge to the firm, created *within* the firm. In an interview of Nicolas Hayek on the success of SMH (the makers of Swatch), one can read: "All it takes is the will to do it. Which is, I admit, no small matter"[6].

As we mentioned before, resource allocation and conventional strategy deal mostly with **r** (assuming **f** and **g**) and **p**. The HP model include, as a fundamental capacity, that of resource leverage. This relates mostly to **f** and **g**. Some examples: transforming R into P will be strongly affected by *focusing*, *blending* or *recycling*; *extracting*, *borrowing* or *recovering* will have a definite influence on turning P back into R. Indeed, we could define *strategy* as the function that generates **f** and **g** over time.

Another fundamental assumption in the model (suggested by empirical evidence) is that A remains constant for a sufficiently long period of time (of the order of magnitude of decades, in a global market). This is the constancy argument. Therefore RE[A] will also be constant. This is a relatively strong assumption, required in this first approach to the model. It is plausible to think that RE[A] may change with time (e.g. because of changes in the environment).

If the company is in a state of stretch its P and R will grow with time. But, with A constant and R growing, T will *decrease* with time, i.e. the company will be under less and less stretch the nearer it gets to its goal. We can draw the one-cycle HP model (see Fig. 3).

Insert Fig. 3 about here

Using the basic HP function, the performance of the company will eventually turn negative as it approaches a state of insufficient stretch, rest or, further, slack.

If A is kept constant, the company will start to loose position in the market and its resources will be used differently (e.g. it may enter into a phase of denominator management, restructuring, and so on) but will diminish. This is an interesting aspect of the model, as it implies that *failure will follow success* unless a new and higher Aspiration is defined before the prior one is reached.

Assuming that new and higher values of A are fixed when the prior ones are near completion, we may draw a first estimate of the multi-cycle HP model (see Fig. 4).

Insert Fig. 4 about here

However, it seems reasonable to assume that the growth of R (and P) would be slower from each cycle to the next. For two reasons. After a certain time, P is so large (both quantitatively and qualitatively) that aspiring to a higher position may be illegal (e.g. anti-trust), unacceptable (e.g. on cultural or ethical grounds) or simply impossible. On the other side, the greater the value of R the more difficult to place the company under a sufficiently high value of T. It is therefore necessary to redraw the model in order to get to the HP model (see Fig. 5).

Insert Fig. 5 about here

After a certain while (say, two or three cycles of success and growth) there would

be a sufficient condition for failure (decrease in P and R). Nothing can prevent that. One should take into account that these cycles are of the order of magnitude of decades, not years.

Let us go back to the real world. I believe one can see some of this dynamics working. So Matsushita has 'beaten' Philips or Toyota is 'stronger' than General Motors. But before that, several decades ago, both Philips or GM were on their way up. They were Beta companies then, not Alphas. And they beat others. So did IBM. Until a point. Then, a path downwards. It may take forty, fifty or more years. Failure (relative, of course) is bound to happen. The HP model predicts it.

If this is so, strategy as stretch and leverage may not be enough to ensure long lasting success.

RESOURCE REDUCTION and BREAK

When R and P reach high values, it becomes difficult to keep a sufficiently high value of T. The company will tend to a state of 'permanent' slack. But it is possible to devise an active or a 'voluntary' reduction of the available resources, say, in a stepwise fashion. There would be a sudden increase in T. An appropriate decrease in R would take the internal tension back to a stretch level.

It is possible that the gap between a suddenly reduced R and the current P may lead to a short term decrease in P (a transient effect). However, if kept under control, the possible effect on performance of an increased T would overcome this and P would start to rise again (and R with it).

If R is to be reduced, what resources should be cut? The simple choice is cash. Probably the right one. Cash is the most entropic resource. It is like heat. To keep a company 'cool', one should make sure that there is no free cash flow around[7]. For the same basic reason, there is another resource that should be kept under control: top staff and technical experts. They generate costs and ideas, sometimes too many. Again the entropy in the company will grow, and the R→P→R transformation will become less efficient.

Hence the proposition: in order to keep a successful company in the path of growth and success, there should be a *periodic reduction of its directly available Resources*, namely cash.

The shareholders could do this, say, with extraordinary dividends or with reductions of share capital. The purpose is to ensure that a state of stretch be kept even at a higher Position. With it, the need for resource leverage will return to the company slowly falling into the trap of abundance.

It is also possible to act in such ways as to reduce the amount of resources available in a more soft way and achieve similar results. A good and well know example is the Japanese car manufacturer that artificially established an internal rate of exchange for the USD that was abnormally low. If a firm that relies on exports or competes with imports creates a management accounting rule that favors the competitor's currency against its own, then what the firm is doing is actually reducing the visible value of its resources.

Another proposition that can be derived from the HP model is a bit more drastic. Imagine that the company had two or more periods of growth and gained a substantial position and volume of resources. To take it into stretch becomes difficult, if not

impossible. This may even de caused by legal reasons concerning limits on P or A. The case of AT&T is a good example.

The proposition is simple. *Break the company into smaller concerns*, i.e. into several different and *independent* companies. Not into more or less decentralized divisions of one corporation. But into really independent corporations, even if an common group of shareholders may remain for some while. It is a world of difference. Evidence suggest that a company will not do so voluntarily. Some 'outside' force is required (we are back to the role of shareholders, independence of outside directors and limitations to the power of executive management). The smaller companies that result from the break-up will find themselves with less Resources and smaller Positions. They will be able to stretch themselves, where their huge ancestor could no longer. If we review the AT&T case, it seems that the overall result would support this proposition.

These propositions can be seen as a direct result from the HP model. They do not require any complicated arguments.

EXPERIENCE AND THOUGHTS ON THE HP MODEL

I have been fortunate in my professional life. It provided me with a wealth of experience on competition, success, growth, stagnation, decline. Twenty years of it, of which fifteen in top executive positions. I will try to summarize part of the learning that I got from having been inside the dynamics of some companies and from having observed others.

A first conclusion is that stretch and resource leverage (and the methods thereof)

are always present during the phase of growth and success, *irrespective of the size of the company* and of the conscientiousness of its use. Probably, it is easier to find a state of stretch in a successful small enterprise than in a global corporation.

Another important observation is that resource leverage is usually and *informal* process, as opposed to the more formal procedures of resource allocation. This may be one of the reasons why smaller firms, with their entrepreneurial organizations, practice resource leverage much more naturally than large formal organizations. Not all small firms practice leverage; indeed, only a very small number does. It is from this small sample that come the ones that become big firms. The amazing thing is that when they do become large, they will formalize their structures, hire plenty of 'trained' managers and forget how resource leverage was done. But they will write 'strategic plans', they will do a lot of budgeting, implement investment decision procedures, competition analysis, the lot.

I have noticed that leverage is very well understood and practiced by successful entrepreneurs, much more than by 'trained' managers. This relates to the mindset argument: allocation is taught in business schools and much is written and spoken about it - 'economics' is often referred to as the 'science' of resource allocation.

Why is this so? One can argue that, in the end, allocation and leverage are the same thing. After all, it is about using resources the *best* way. This is not the point. Allocation is a process of *optimization*. When we do it, we *assume* effectiveness. Or, in other words, we assume a given relation between actions and outcomes. Allocation is mostly about efficiency.

Say we want to promote our product and brand in Germany. Given certain objectives and using conventional models (public, e.g. textbook models, or proprietary,

e.g. our experience in other brands or markets) we could derive an optimal amount of USD 200M in advertising for next year, and even how to split that amount between different media. This is resource allocation.

Now let us consider that we do not have, nor even consider having, USD 200M. We can do one of two things: abandon the idea of introducing our product into Germany, until we have enough funds to do it the 'right' way; or lower our objectives to the tune of the amount of available funds.

But we can do another thing: to figure out a way of achieving (perhaps...) the same objectives with the funds that we have. This will involve getting out of the usual models. This is no longer an optimization process. It is a resource leverage one. We must attempt to multiply the outcome of the cash we spend relative to that resulting from conventional advertising.

This was certainly the situation of Swatch. So what did they do? "We built a giant Swatch. It was 500 feet high, weighed 13 tons, and actually worked. We suspended that giant Swatch outside the tallest skyscraper in Frankfurt, the headquarters of Commerzbank. ... Believe me, when we took it down, everyone we had wanted to reach had received our message". This is a superb example of *extracting*. And then of *conserving*: "We (afterwards) also hung a giant Swatch in Tokyo, in the Ginza".

I have lived inside several similar situations. During a period of stretch and growth, one experiences a feeling of continuous lack of resources. Everybody in the firm is busy. But although there is a sort of turmoil, there is not a lot of confusion. The stretch does provide an orientation that keeps the alignment and gives coherence to actions that would otherwise be or look quasi-random.

Taking the company into a state of stretch is key to success. We have to ask

ourselves then what triggers the process of establishing a strategic intent, who does it, when and how. This is trying to peel another layer off the description and understanding of competitive success. The fact is that what I have experienced is not exactly coincident with most of the literature that I have read on this subject. This literature seems to suggest that: a) establishing an aspiration or purpose is an act of the firm's own will; b) it can happen at any time -but should not happen often; c)the process and the articulation of the purpose should be such that everybody in the firm knows it, feels motivated by it and acts accordingly.

Is stretching really an act of self-determination? Or is it a response to an external challenge?

When the entrepreneur decides to start-up a firm, we may surely say that the purpose of the firm (not necessarily that of the founder) is an internal challenge. Take the story of Apple, another example of stretch, leverage and cycles of success and failure[8]. When Steve Jobs and Wozniak sat down and started Apple, we can imagine the state of stretch. We feel it again when the Macintosh project was started. I have experienced similar cases. However, if I remember the details of each case that I lived, I can see that the apparent self-determination also an was answer to an external challenge. Without it, I doubt that the state of stretch and success would have occurred.

We have all seen a series of Japanese companies taking a leading role in several industries. This has happened more or less at the same time. Is this wave of success a coincidence or is it that many Japanese companies had to overcome the challenge created by a lost War? Did they get outward looking and fit because of their own will or because the Japanese market was a very aggressive one?

I would argue that the formulation of an intent that matters comes in three

occasions: *before start-up*, as *a result of an external challenge* or *near the end of a cycle of success and growth*[9].

Taking a firm into stretch does not occur in hours or days, after a somewhat complicated, cognitive and planned process. In the cases that I have witnessed it took months, if not years, to do it. Who did it? The firm's leaders. They may talk to some of their managers while thinking about it, they may take some suggestions, but it is a task that they will take to themselves (I could argue that it is this task of stretching the firm that makes a CEO the *leader* and not just the manager with more power). When the firm's leader finally articulates a sufficiently stretching strategic goal (a rare event), he is totally convinced of it. He talks about it all the time. He lives it in anticipation. He has difficulty in deciding against it. Whoever is around him will not have confusing or contradictory signals about where they are all going and how to get there.

Some literature draws attention to the methods of establishing a firm's intent (e.g. participative) and to its content (e.g. simple, emotional). My own experience suggests that neither is so important as the *quality of the firm's leadership* and the *degree of tension*.

I have seen that successful aspirations are established in a strong top-down fashion. They are thought rather exclusively by the firm's leader (e.g. owner or CEO or equivalent). The vision that the CEO has for the firm is not 'seen' by everybody in the firm. Indeed only very few people around him will really share it and understand it in its full implications. The relevant bit is not that everybody 'shares' the vision but that everybody in the firm 'follows' their leaders.

I see this even outside my direct experience. Most cases of success and growth include strong or charismatic leaders[10]. Does everybody at Microsoft share Bill Gates

vision of the future? or do they simply believe and follow Gates route? Was the 100 billion USD of sales a wrong goal to IBM or was it that, whatever the declared goal, the 'everybody' at IBM were no longer looking or listening to their leaders? I think we can defend a case where Ackers & Co. were no longer the *leaders* of IBM but just its *rulers*.

The degree of tension is key to the effectiveness of leverage and growth. As Fig.2 shows, stretch is 'sufficient' between T1 and T2. I think that {T1,T2} is a very small interval for each firm and moment. It will depend on the firm's flexibility and on its shape (i.e. its mix of Resources). Probably the real difficult thing is not to articulate a firm's strategic intent but rather to do it in order that the degree of stretch be enough, but not too much, to trigger leverage and growth.

THE T MODEL

The above remarks are lateral to the HP model, though they concern the establishment of stretch. I will now add two components that are not present in the HP model of the dynamics of competitive success and failure: *intelligence* and *memory*[11].

Having been involved in growth-success paths in more than one company made me notice an interesting and common fact. When a firm is growing 'everything' seems to be well. There are some wrong decisions but most of them are good ones. The firm seems to attract good business opportunities. Competent people want to join the company. Bankers are keen to lend. Suppliers give you better terms. And so on. P, the firm's position, goes *ahead* of R. The firms looks bigger and better than what it really is at that point.

Now, what if the rate of growth starts to go down? The 'mood' changes. Financial experts start to doubt. The media will pinpoint some wrong moves by the firm's management, though they have always existed but were unnoticed before. Distributors will start telling you that your product is not as good after all. Your own managers will start to argue and claim they need much more resources than what they have. And so forth. Again, P will move in front of R. If one listens to some news, it may seem that GM or IBM are 'already' bankrupt. Many seem to forget that they are still world leaders in market share, let alone that both were excellent firms.

This effect is just like a derivative effect, i.e. the changes in the rate of change influence change itself. R[t] will depend not only on the rate of change (R'[t]) but also on the acceleration of change (R"[t]). This shows that firms are *intelligent* systems, to use an expression from control theory. A firm behaves today in anticipation of its behavior tomorrow. There is an old saying that "success attracts success and failure attracts failure", a nicer way of describing roughly the same.

The derivative effect, or intelligence, acts positively when the firm starts its growth path and when it is growing ever more rapidly. It serves as the 'natural' counter force to the fact that while the firm is growing its tension is diminishing. A lower degree of stretch would bring about a lower rate of growth, making it impossible for the firm to get near to its aspiration level. The positive derivative effect increases the firm's rate of growth. However, at some point in time, growth may diminish (e.g. the firm is getting near to a state of slack). Intelligence will then start to act negatively. It will itself reduce growth further. The effect of derivative action can be seen in a loss making company, and is not pleasant[12]. A big portion of 'denominator management' can be explained as a result of the firm's intelligence[13]. If this is so, can we do something about it? Probably

not too much. In theory, through functions **f** and **g**, we could control R. But if it is difficult enough to control the growth of a firm with leverage, think about controlling the growth of growth. I will explore later the use of the firm's intelligence.

A side note. Adding the derivative effect to the HP model seems indeed necessary. Basing success on stretch and leverage creates a first degree model. Though the actual shape of R[t] (as in Fig.3) depends on the relation between R'[t] and T (Fig.2), we can say that under reasonable conditions R[t] would always be like in Fig.6: it would neither get to the aspirations level nor would it decline.

Insert Fig. 6 about here

With a derivative effect added then R[t] can look like in Fig.7. The actual shape will now depend on the relative importance of tension and derivative effect. A firm R[t] could even oscillate (as in Fig. 7b) around the goal, in a state of slack. We will seldom see it because a 'wrong' extrapolation by the firm's management of the decreasing R would lead into changes (e.g. in **f**, **g** or **r**) that would alter the dynamics of R from its otherwise oscillating path - and often take R down even further.

Insert Fig. 7 about here

However, even with a derivative effect, the model does not predict R going down

in a monotonous fashion - something we all know happens often after a period of success. The argument that the firm is under a state of slack is not enough. Because, if the firm would fail and see its resources diminishing, something that the derivative effect would make even faster, then the model would predict that the firm would get back to stretch - assuming aspirations were kept at the same level. Back into stretch (i.e. Alpha made Beta again), the firm would start to grow again. And so on. Therefore, there has to be something more than slack and negative intelligence to justify that Alpha stays as Alpha and, incapable of stretching further, ends up breaking down and failing.

It would be conventional to find causes outside the firm for a decrease of R. The competition is the most obvious one. A typical example: a firm grows and attracts others into that market; the price of the product has to be lowered to keep market share; some of the best people in the firm leave to join some of the competitors; this, and more like it, will implicate a decrease in R. But then, what we are saying is that the firm is *not* performing resource leverage anymore. Why?

The answer can not be claimed on the competition. Leverage is something *we* do as managers, mostly through designing function **f** and **g**. Competitors may make it more 'difficult', but it is up to the firm to find the ways to continue to grow (or *stop* - I will come to this option later). Even if we take a case of a drastic change caused by function **p** (e.g. a government ends with the exclusivity or monopoly rights of a state-owned firm - as in telecommunications in some European countries; or, another example, if a patent's protection period comes to its end) how can we explain why a firm that *was* able to multiply its resources can no longer do so? The cause for failure must come from *within* the firm. The loss of command over the firm's Position in the marketplace is not the cause of the decline of a firm (if anything, it is the effect of such decline)[14]. One can

even argue that aggression to a company's position may stimulate it and make it more effective - an increase in competitiveness may induce a higher degree of resource leverage from our opponent, not the opposite.

There are many negative factors growing within a successful company. I can think of and testify on several of them. I could start with *fatigue*. Being in a stretched firm, participating in its success path and actually making it happen, is tiring. After a while (I am talking years, here) we tend to sit back and watch the firm growing, instead of standing and creating that growth. But, worse, I can mention *over-confidence* and *complacency*. We were right so often, that we must be right all the time. Our resources have grown and grown, they will return to growth; if the firm seems to be failing, then surely it is just a temporary problem. The positive derivative effect helps us getting into this wrong posture. We may start to idolize our techniques and methods. We will slowly start to petrify. From *leaders* of the firm, we may turn into the "*dominant minority*" of the firm - to use an expression by Toynbee.

I see that this happens from the very beginning of success. Slowly and surely. As if, remembering what we have done well, we replace style with unity, élan with drift. It is the "intoxication of victory". I will call it *memory*, to use again an expression from control theory. Memory is like the cumulative history of the firm. It is an *integral effect*, something that grows while the firm is growing, until it reaches a value that will bend R down. The firm's memory is a proportional of $\int R[t]$ (the integral of R[t] from t=0 to t). Memory is *always* growing; it can only decrease when the firm is already 'dead' (i.e. when R becomes negative).

The negative effect of memory will only be felt after the $\int R$ reaches a certain threshold. This may occur only after more than one cycle of growth. Memory and slack

are *not* the same thing. Slack is a state, a static condition, to which the firm goes in and may come out. Memory is a dynamic and intrinsic condition, always growing, always present. *It is memory that makes it so difficult to stretch a company that has achieved its aspirations*. The deep difference between a pure Alpha and a Beta is not the level of resources relative to the respective aspirations, though this plays a fundamental role in leverage. What makes them really different is that Alpha has an 'history', a memory: it *was* a Beta before, probably more than once. From Beta it became Alpha. Going back is not at all easy. Memory, a sort of entropy, makes the firm irreversible. With the firm's memory, managers become mechanical instead of creative, afraid of change instead of explorers of innovation. It is memory that causes the nemesis. All successful firms will get there one day, and fail.

There may be exceptional cases of firms that are so successful in dealing with one or two really difficult challenges that they may stretch so much as to become '*exhausted*' and breakdown -this may be probable in successful pioneering firms (e.g. Sinclair). Another exception is that of firms that, after one or two success cycles, will live very long lives with an almost constant level of resources; the nature of their business keeps them alive but steady in the limited environment that they have selected initially. We may called '*trapped*' firms -rather visible in some small and traditional concerns (e.g. a delicatessen shop or an hotel that is in business since over 100 years ago).

Insert Fig. 8 about here

We have built the T model gradually (see Fig. 8). Here is a brief summary. Stretch is the necessary condition for competitive success. But, as we have seen, stretch can be the result of self-determination or a response to an external challenge (in the latter case we can use the term stress). This tension is the basis for resource leverage, just as in the HP model. Two further elements are added: intelligence (a derivative effect) and memory (an integral effect). Intelligence acts positively when the firm starts growing, when success accelerates. It will be a catalyst of leverage. The firm will grow. Stretch will diminish. Growth will slow a bit. Intelligence will now invert its effect, and be negative. It will act as a inhibitor of leverage. The firm will still grow, but at a rate that gets near to zero. The firm, by now resource-rich, will start to show signs of slack. Negative intelligence and slack will turn into failure. The firm will see losses, its Resources decreasing. Memory may still be small, and not felt. A new challenge may be found, a new and higher aspiration fixed. Back into stretch, the firm will repeat the cycle of growth. But memory will now get so important, that its effect will be felt. Returning once again into slack, full of resources, after (in this case) two cycles of success, the firm starts to deteriorate. Unable to 'see' it, the firm will continue a perfect Alpha. The capacity for self-determination lost, no intent will move it back into stretch. Deterioration will continue. Perhaps an external challenge will wake it up. If not, it will eventually 'die'.

Under the HP model, the ultimate criteria for competitive success is leverage. Not in the T model. Resource leverage is still the way to grow, though it may now be helped by *using intelligence* (i.e. profiting of positive derivative effect and stopping or reducing the negative effect, later in the cycle).

Under the T model, the ultimate criteria for sustained success is the capacity to

break the memory effect. If this is achieved, the firm will go from Beta into Alpha into Beta into Alpha, endlessly. How this is done is another matter.

USING THE FIRM'S INTELLIGENCE

I believe that successful entrepreneurs or CEOs have an intuitive knowledge of the firm's intelligence. When we listen to them, they are almost always giving a positive description of the dynamics of their companies. They avoid referring to slow or decreasing indicators, though they know about them and are probably doing something to fix them (I can testify to this, i.e. this avoidance should not be confused with lying or being 'away from reality'). This is true even in internal meetings, where there is nobody from the outside to impress. The question is that measuring growth is not easy. Often it is sensed, not measured. A lot comes from signals, not from hard facts. Accounting is rather limited in measuring R. Measuring P is also important, as it shows how the marketplace sees and feels your growth. We use indicators such as sales or market share growth (a part of P, not R). Therefore, *signaling about growth* may be critical in controlling derivative effect.

Another possibility, that we have used twice with reasonable success, is a form of *cross-subsidization.* We can use a large division as a customer to a smaller division to control the visible growth of the latter and induce positive derivative effect (I am talking about controlling growth, not costs). We can, for example, control the results of a subsidiary company. A P&L with a red bottom figure is usually taken as a 'sure' sign of failure - this is, by the way, another component of the cowdung of our managerial frame.

But a company may show accounting losses and be increasing R, i.e. growing, i.e. being successful. It may be that the firm is growing a lot in terms of knowledge -an item whose bookkeeping is either difficult or impossible. Or it may be that there is a long gap between the result of function **f** and that of function **g** -a sort of long period between seeding and harvesting- in that industry or market. Or other reasons. However, it may be that the accounting loss is really a sign of failure, even smaller than the actual decrease in R. Who can tell the difference between a 'good' loss and a 'bad' one? If one is listening to a CEO (or to one of our own division managers) and he is saying that "... the loss in these last two years is just an investment in the future..." how often would one smile at such claim? Probably more often than not.

It may happen that we know that a period of a couple of years of accounting losses is 'part' of the business, say, when we enter a new country and invest in a production facility. Even if this is built as much as possible in the minds of everybody, the subsidiary is bound to suffer of negative intelligence. Local managers may start to 'cut some corners', introduce undesired changes in the implementation of our global policies, and who knows what else, just to show that things are O.K.. We may send an experienced country manager, that knows it all and will not be impressed. But the other people may be. Or the local financial marketplace. We may also introduce some rules of management accounting that will show a more positive picture (and realistic, for that matter). Or we may make one of our older and larger subsidiaries a temporary customer to the new country one, and achieve a similar result. Though these seem, and are, very simple rules, I have often seen them forgotten. And the firm's positive intelligence is lost or the negative one not minimized.

BREAKING THE FIRM'S MEMORY

This is the real challenge, probably after one or two periods of competitive success and growth. How can we beat this integral effect that stops the firm from being again what it was before?

First, where is this memory in the firm? I suppose that memory builds up in the firm's *organization structure*. I use the term structure here to mean the *system* (or pattern) *of relations between the individuals that make up the organization*. It includes the leadership (CEO and top executives) and its style, expressed in the relations between the leaders and the rest of the organization, and with the outside world -namely with the different stakeholders. We have seen that the firm turns R→P→R with functions **f** and **g**. These functions, the result of leverage, do not work in the vacuum; they work in a 'network' that connects Resources and Position; this network is the firm's structure. Function **f** and **g** are influenced by the structure. If the structure changes, so does R→P→R.

Several authors, and my own experience, have shown that the organization structure changes with the firm's size and age. This change is rather independent of our will or technique (e.g. there is no way for one global organization, with thousands of managers and tens of thousands of workers, to be just like the informal and centralized entrepreneurial organization). I believe this evolution of the structure to be accompanied by (or even be a sign of) the growth of the integral effect that we named firm's memory.

Surely, the memory lies foremost in the leadership of the firm. They 'designed' the challenge. They created the first ways to multiply resources. They saw it being done and imitated. They will be the more affected. Let me use a phrase by Toynbee, though he used

it for civilizations: "History shows that the group which successfully responds to one challenge is rarely the successful respondent to the next...Those who have succeeded once are apt, on the next occasion, to be found 'resting on their oars' ". I think we can fill pages of examples with firms, and prove the same point.

We can, therefore, formulate a prescriptive proposition: *a CEO* (and his top staff) *should have a limited total term in a company.* Say, a maximum of ten years[15]. The ideal would be for a CEO to step aside in the peak of the firm's performance in *his* cycle, when a new intent is required to stretch the firm again. Is this easy? Obviously not. For many reasons. Amongst which, and not to be forgotten, the fact that the CEO is feeling fine where he is - and with a lot of influence on how to stay there. Unless, of course, the maximum term is a matter of the firm's articles of association - and a large qualified majority is required to change it. The CEO could then serve as a non-executive director, not more. Probably, and for the same reason of breaking memory, *the new CEO should not be selected by the old one* [16].

Often, in recent times, we have observed several cases of once-successful firms facing the challenge of defeat and failure (IBM is a superb example). Is it interesting to note that when the pressure really mounts, a new CEO is brought from *outside* the firm. Why from outside? To be able to change, it is said. This is an implicit recognition of the existence of memory. An outsider, at least, has little or no memory of the firm.

The structure is not the leader alone. Other officers and senior management (say, down to Group or Division Manager) make up the next layer where memory builds up, the top management structure. So, again, we will have to state that for a firm to break a strong memory (surely the case of IBM), it may have to revolutionize its management structure. I gather the best way to do it, is the same norm that was established from the

HP model: *break the firm in smaller, independent, concerns*. Each new firm will have a 'new' top management structure (e.g. an ex-Division Manager may now be a CEO). Several executives will leave. Many of the relations between components of the old organization will be broken. A major part of the negative memory will vanish. Stretching is possible again for the smaller firms.

There is a granted way of beating memory. A rather drastic one, I presume. *To stop the firm*, e.g. to liquidate its Resources near the top of a success cycle. I will not explore this further now. Surely there would be much less bankruptcies. And, if we want to take this norm into an unreasonable limit, how would a world be where companies had a limited life, by decree? One thing is probably true in that world: not so much energy would be consumed or harm done to progress by failing firms trying desperately to survive. Anyway, even so, firms seem to have only a life expectancy around thirty years or so in our world.

Avoiding the negative effect of memory is a difficult task. For civilizations and for firms alike. If there is an axiom, if I had to say, in five words, everything that I have learned with experience, than I should say that *structure is stronger than strategy*. I would certainly love to prove it.

[1] The 'cowdung' is the "conventional wisdom of the dominant group", a marvelous expression coined by C.H. Waddington.

[2] I have based the derivation of the HP model on Gary Hamel's working paper Breaking the frame (December 1991, London Business School) and the derived article Strategy as stretch and leverage, by Hamel and Prahalad, published in the March-April 1993 issue of the Harvard Business Revue.

[3] Indeed, when I tried to extend the HP model, I ended up with something that contains ideas that can be found in Arnold Toynbee's A Study of History.

[4] A brand is a Resource. Brand awareness, brand image and the like are Position.

[5] This Profit is not the accounting profit, nor is {t1,t2} an accounting or fiscal period. If {t1,t2} is small, we may speak of short term success ($\Delta R>0$) or failure ($\Delta R<0$). Clearly, a short term failure is not an indicator of long term failure; likewise with success. Function **p** may induce a decrease of R for a couple of years (e.g. in a recession), and this may be overcome soon thereafter.

[6] This interview was published some pages after "Strategy as stretch and leverage". It is a remarkable coincidence: in the interview one can find several examples of resource leverage.

[7] It is interesting that I have only recently 'discovered' agency theory. It was like "reading a book after seeing the movie".

[8] It would be interesting to take cases like this and try to see how they fit with the HP model in Fig.5.

[9] Stretching a firm after a period of success is probably the hardest one. This difficulty is clear in Hamel and Prahalad's Strategic Intent. I am convinced that this difficulty is an intrinsic part of the dynamics of success (see the T model).

[10] I have to admit that I do not know as many cases of Japanese firms as I do of western ones. However, cases like Sony or Honda suggests that a strong leader is also part of the success story in Japan.

[11] The metaphors of 'intelligence' and 'memory' have been used in, for example, Organization Theory. I use them here with a precise meaning - different from other uses elsewhere. I recognize that it may be better to look for alternative nouns.

[12] Take an example. I have known well X, at one time the largest French agri-food corporation. The company had two periods of growth. A serious period of decline started recently. During my last visits to

them, I observed what I have seen over and over in similar situations. There was an obvious cost reduction plan around. People, formerly up and talking with excitement in the large trading rooms, just facing L'Arc du Triomphe, were down and quiet. Even the carpet needed urgent replacement. The ashtrays in the meeting room were full. The CEO's secretary, usually very friendly, just expressed a vague smile and did not even offered a drink. How could the same mangers that led that company into success let things get this down? How could they expect that someone would work positively in such an atmosphere?

[13] Here, the use of the term 'intelligence' may seem a bit inappropriate.

[14] The reason why we may see a loss in P as the *cause* for decline is probably related to the fact that, as we said before, P goes *ahead* of R - either going up or going down.

[15] Establishing this period seems another interesting matter for some research to be done. I gather that this maximum term depends on the firm's age, industry and time (e.g., in times of changes in an infant industry this may be longer; in a mature industry, shorter). By the way, the US President can stay there only eight years.

[16] I think that the 'really competent' leaders will eventually select the right sort of successors, even in strange ways. Take the case of Apple. It was Steve Jobs that brought in John Sculley. Steve must have sensed that the structure was changing and that he was an obstacle to the required changes. Steve wanted what so many leaders would like to have: a peer that does everything they should do and don't, but a peer that is 'inferior'. When confronted with the loss of power, most will fail and keep on being the boss. Unless a Board of Directors or some strong shareholder prevents them from going on. As was the case with Steve. And now, is it time for John to leave?

By the way, looking at Next, we may say that the ability to formulate an effective intent is not person-dependent. Conditions matter. Or, perhaps, Steve 'took' a lot of 'memory' from Apple into Next.

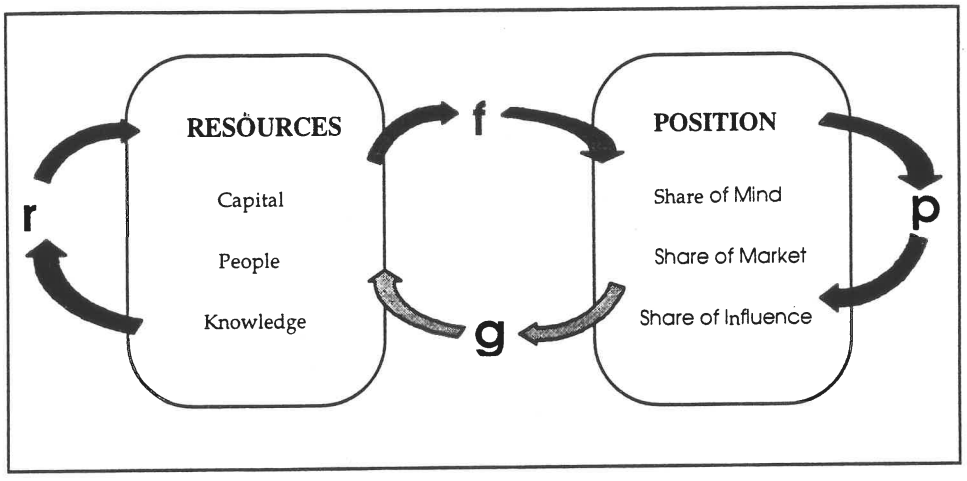

Fig. 1- A simple model of the firm

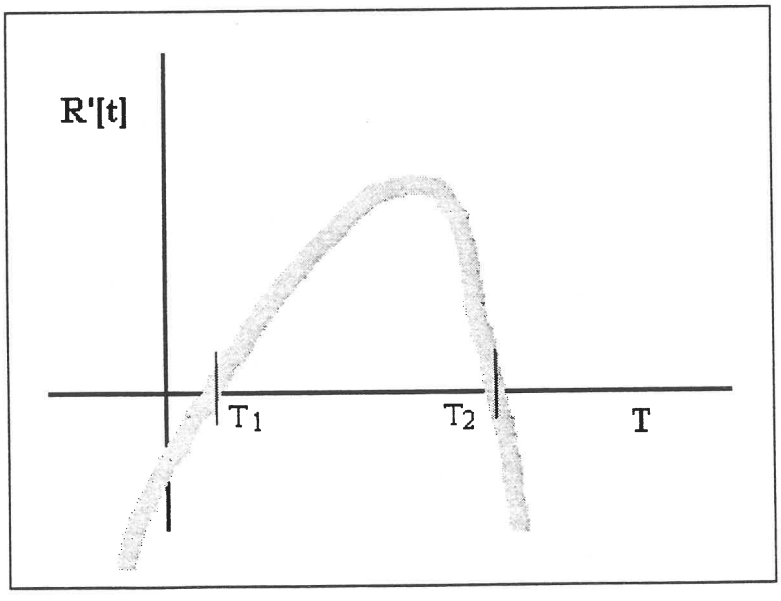

Fig. 2 - The basic HP function

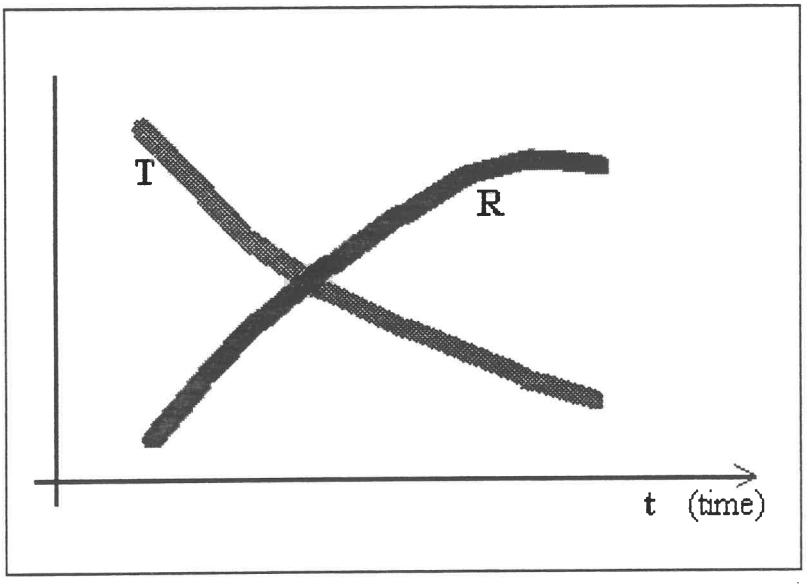

Fig. 3 - One cycle HP model

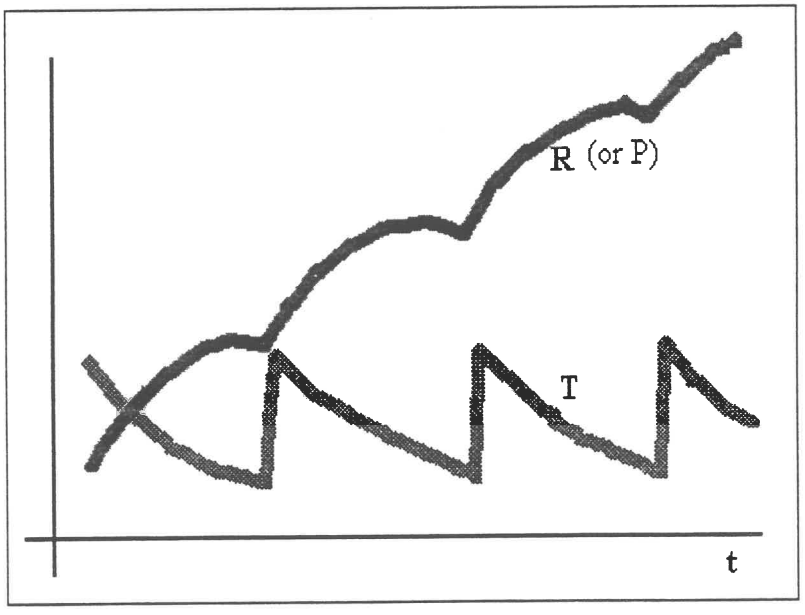

Fig. 4 - The 'ideal' HP model

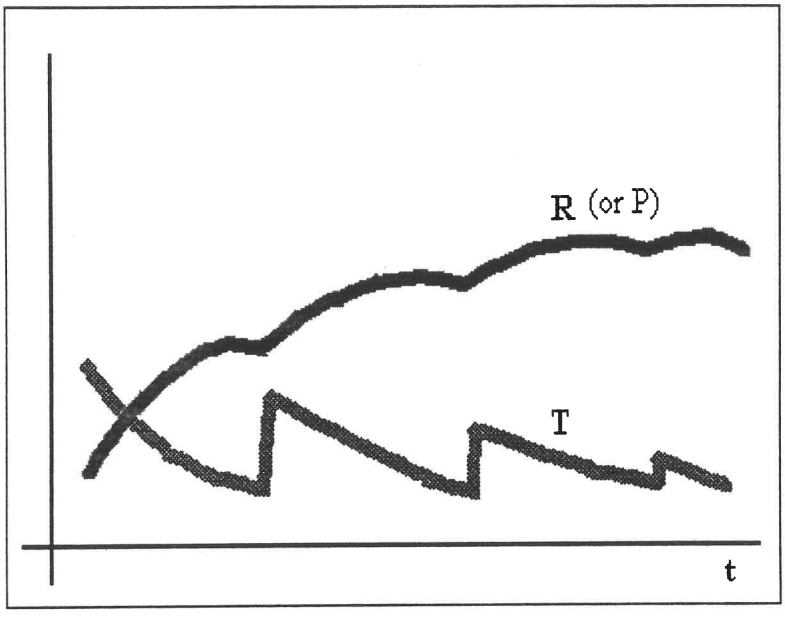

Fig. 5 - The HP model

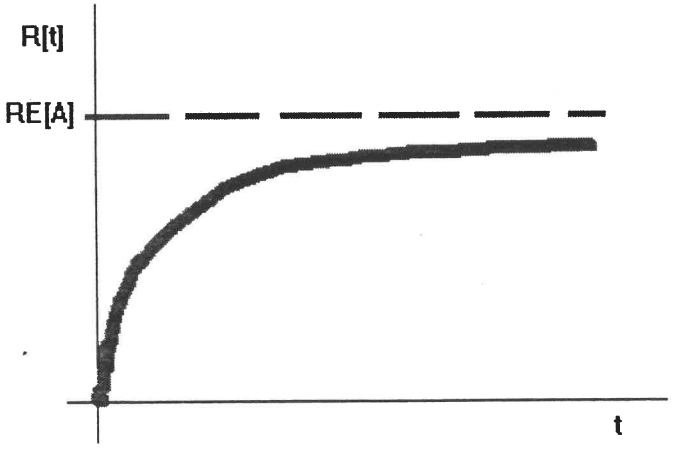

Fig. 6 - The shape of R under the HP model
- a first degree model

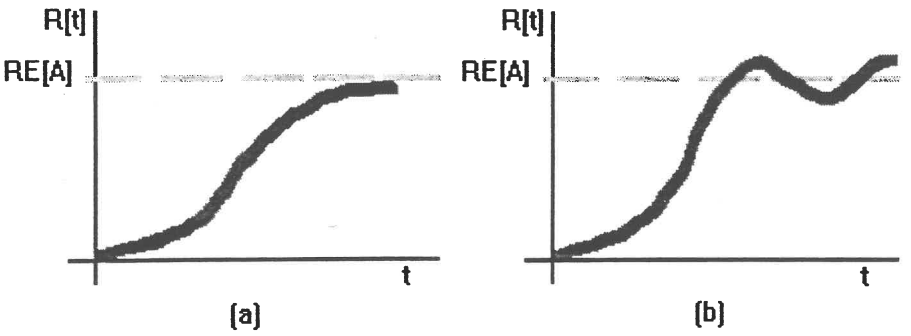

Fig. 7 - The shape of R with intelligence - a second degree model

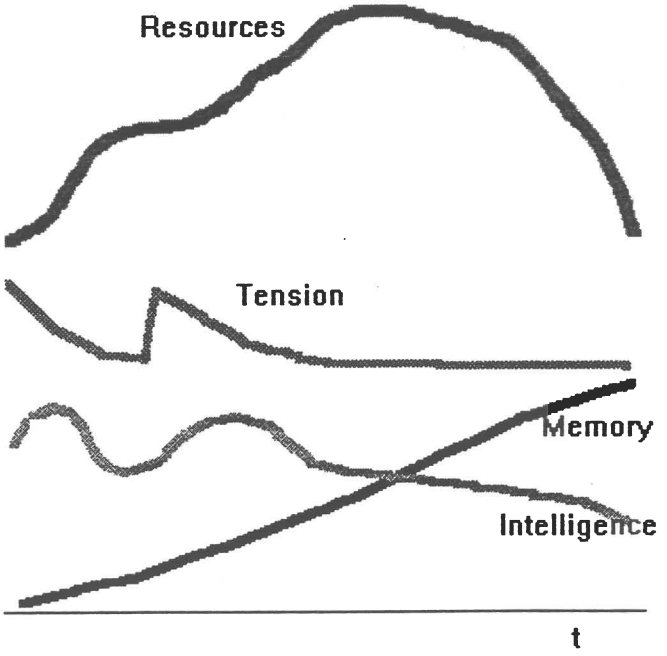

Fig. 8 - The T model - a two cycle case