

DESIGN AND RADICAL INNOVATION: A STRATEGIC PERSPECTIVE BASED UPON A COMPARATIVE CASE STUDY BETWEEN EMERGENT AND TRADITIONAL INDUSTRIES IN PORTUGAL

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ABSTRACT

The survival challenge faced by the Portuguese companies nowadays has promoted Innovation as the main management strategy to be applied. This research reveals the importance and the role of Design as the basic and integrative tool for the success of this strategy, focused on Radical or Breakthrough Innovation. The main contribution of this paper is the proposal of a conceptual model developed from a comparative case study research, made among Portuguese companies from the emergent sectors connected to new technologies and Portuguese companies from the traditional sectors. That work allowed the definition of the Success Critical Factors to consider for the development of radical new products: integrating new technologies (Science Knowledge), market sensibility (Marketing Knowledge), forecasting new needs or user interfaces and disruptive creativity (Design Knowledge).

KEYWORDS: Radical Innovation, Design, Strategy, Emergent Industries, Traditional Industries.

1. INTRODUCTORY NOTE

This paper intended to give an actual overview about Design, Strategy and Innovation in Portugal. The focus is on problems faced by Portuguese companies, causes and changing forces. A comparative study between Emergent and Traditional industries is made in order to point out new perspectives on the need of radical changes on strategy level and critical factors to success in order to succeed in the international market.

2. CONCEPTUAL FRAME

2.1 FROM A PERSPECTIVE OF MANAGEMENT

Strategic management can be summed up as the way any given entity is organized and how it interacts with its surroundings, taking into consideration a given competitive context and market dynamics. We will try to understand the current context that conditions and is reflected on management schools and practices, regarding innovation policies and the role of design.

Genlot (1998) claims that corporate management has followed a path based on the planning and setting of goals, resorting to the separation of basic tasks according to coordinated patterns following the principles of obedience, optimisation of organizations and structures, taking into consideration the centralization on economic goals.

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In the present social and economic moment, the aforementioned concepts cannot be adapted to the economies of diversification and relaxation, as reality requires enormous changes pertaining to the conception of management models, because the classic organization models fail to meet the requirements of an atmosphere marked by turbulence, change and unpredictability (Tofler, 1981).

Companies are then confronted with a need to handle the unpredictable and unstable as well as the possibility to explore the creative potential presented by complexity (Stacey, 1993; Nonaka, 1991).

This new reality revolutionizes the conceptual model. One must face a break from the past and lack of efficiency of classic strategic planning. Mintzberg (1994) is quite biting when attacking strategic planning: *«the benefits of a formal plan do not outweigh its harmful side to the strategic development, because it separates the inseparable, mixes global with the sum of the parts and predetermines the unpredictable»*.

The dominant leadership logic for a company is still based on conformity: leading based on estimations, respecting pre-defined plans, using tried-and-tested methods looking for order and stability or guidance for reducing costs and improving processes (Zorinho et al, 2003), considering that the current challenges the companies face, are insufficient, namely in the treatment of the unforeseen and of instability, which should be handled by a logic of innovation and reaction. The survival/extinction of companies is directly dependent on adjusting quickly and continuously. The balance between evolution and instability, between disorder and order, must be found in a way where innovation outweighs the constructive logic, innovation is creative destruction as Joseph Shumpeter says (1976).

From this point of view, a successful company is identified as a system working in “scientific chaos”. It generates instability, even when the surroundings do not affect it: *«Its relation with the surroundings is not a simple one of adapting or pro-acting, but fundamentally, one of creative interaction, in the sense of positively exploring, in real time, the instability in order to generate variety and develop new orientations capable of transforming their own surroundings. Therefore, instability is far from being an enemy of success, it is considered vital for the company to remain innovative.»* (Sousa, 2000).

The recognition of the individual’s key role measured by criteria of competence, motivation, training, responsibility, polyvalence, team-work abilities and building of networks, has made human resources a key to the development and continuity in the organizations.

Companies become learning companies, as they focus their attention on Organizational learning, knowledge management, geared towards learning, knowledge, and updating, renewing and consolidating knowledge itself. This knowledge society brings another type of worker, the “knowledge worker”, as Peter Drucker has named them (1998). These are highly trained people who learn and increase their knowledge constantly and can use that same knowledge (Sousa, 2000).

This way, the wealth-generating source is strongly linked to immaterial investments such as specializing competences and valorising human resources. Managing this factors and articulating and integrating them with new technologies becomes crucial in corporate performance *«the management paradigm has evolved; it went from a material resources-centred logic to an immaterial resource-centred one»* (Sousa, 2000).

This new Management paradigm: the increase in levels of complexity and uncertainty in the surrounding environment; dynamics of change and technical and technological revolution, brought about an innovation in

corporate theories and practices, ranging from simple adaptations to the surroundings to acting on the surroundings and changing them (Sousa, 2000). In his book “strategy safari”, Mintzberg organizes it in 10 separate schools as we can see on Table 1.

Recently, Mintzberg stated that: *«management is a practice that combines Art, Craft and Science. Art encourages creativity, resulting in insights and vision. Science provides order, through systematic analyses and assessments, and craft makes connections, building on tangible experiences»* (2004), as shown in Table 2. Therefore, while science is deductive, art is inductive and craft is interactive. This is totally revealed in the way each approaches strategy, being a process of visioning (in art), planning (in science) and venturing (in craft). This approach arose against the heroic style of management, where the work for self profit regarded only the shareholder’s income - *“the result is a corruption of the very essence of corporate leadership, which has become more a means to get ahead personally than to make an organization a better place. This may sound strong, but current practices in executive compensation, manipulation of financial statements, casual dismissals of human resources at the drop of share price, and the cash in and run tactics of many of today chief executives indicate that we are in a crisis of corporate leadership”* (Mintzberg, 2004). This represents one of the types of unbalanced style of management, together with narcissistic style (at the pole of art), tedious style (at the pole of craft) and calculating style (at the pole of science). Mintzberg then suggests three functional styles: visionary (*“artistic but rooted in experience and supported by a certain level of analysis, common among successful entrepreneurs”*); problem solving (*“combines craft with science, can be significantly analytic but is also rooted in experience and depended on a certain capability for insight”*) and people orientated or engaging style (*“practiced by managers who do a good deal of coaching and facilitating, being mostly craft but with enough heart to make it interesting and enough science to amke it viable”*).

Norsdtrom and Ridderstale (2004) call this new need of reviewing the values *“Capitalism with cause”*, where companies need to re-find themselves and need to be managed as a cause and a purpose of being in business. The emerging reality is forcing us do a re-examination of company centric value creation traditional system. Consumers have more choices that yield less value – a paradox of our present economy. The changing role of the consumer allowed a new frame of reference for value creation, based on the co-creation of value.

Several changes happened in the role of the consumer: from isolated to connected, from unaware to informed, from passive to active. The impact of the connected, active and informed consumer revolutionizes emerging and existing markets, changing the Information access, experimentation, activism, the Global view, the Networking and generating *“Thematic consumer communities”* (in which ideas and feelings are shared by individuals in spite of their geographic or social barriers).

All these changes affect the way companies design products, develop production processes, craft marketing messages and control sales channels with little or no interference from consumers. Consumers now seek to exercise their influence in every part of the business system.

Consumers now have the tools and the interest of interacting with enterprises and co-create value. The main support for co-creation is interaction, considering the emerging reality (Prahalad, 2004, Peters, 2003).

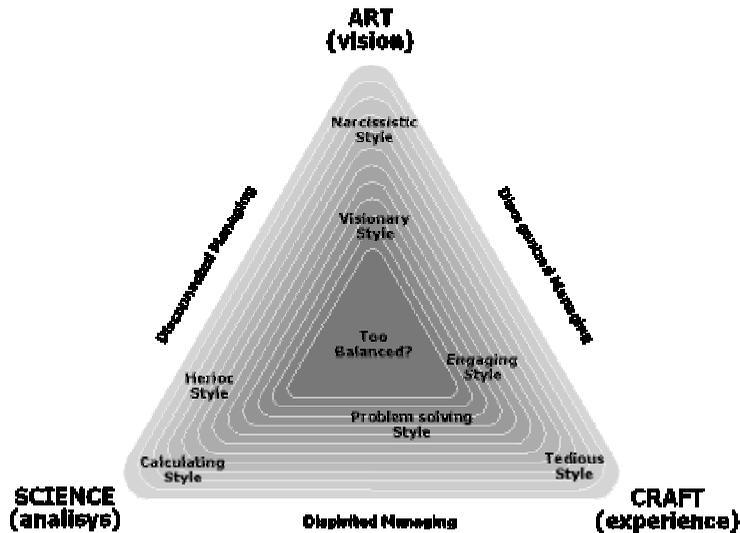
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Table 1: Mintzberg 10 Schools of Management focusing on the classical versus emergent groups.

<i>GROUPS OF SCHOOLS</i>	<i>SCHOOLS</i>	<i>STRATEGY CONSTRUCTION</i>
Prescriptive or Racionalist Schools	Conception or Design”	Conceptual
	Planning	Formal
	Positioning	Analytic
Descriptive or process Schools	Entrepreneur	Visionary
	Cognitive	Mental
	Learning	Emergente
	Power	Politics
	Cultural	Ideological
	Environmental	Reactive
	Configuration	Transformational

Source: Sousa (2000) based on Mintzberg.

Table 2 : Mintzberg Managerial style Triangle



Source: Mintzberg 2004 Three Poles Managing Chart

2.2 FROM A PERSPECTIVE OF INNOVATION

To innovate is simply to do things differently, based on the value of ideas, in the recognition of new opportunities and in the ability to implement them. As shown on table 3, innovation can be related to Mintzberg's three poles approach. In order to achieve distinctive innovation it is important to evaluate the balance between the available Skills, the potential generating Knowledge and the emerging Creativity. It is a balance among experience, technology and inspirational innovation. This chart also shows the relations between the unbalanced strategies of innovation, being "too Risky", "too Normal" and "too Visionary".

The main focus of this article will be Radical Innovation as a strategic path to create distinctive values for companies. Radical Innovation linked to the strategic component of business model is currently considered as a main point, especially in Portugal, towards changing the image of Innovation.

One of the main authors for this Radical Innovation theory is Hamel (2002). This author claims that even managers still have a restricted view of innovation According to Hamel, «*Radical Innovation requires to escape the shackles of precedent and imagine entirely novel solutions to customer needs and dramatically more cost-effective ways of meeting those needs*».

Things that can't go on forever *don't* go on forever, to move forward, the only weapon is systemic, radical innovation. In these suddenly sober times, the inescapable imperative for every organization must be to make innovation a capability present anytime, anywhere.

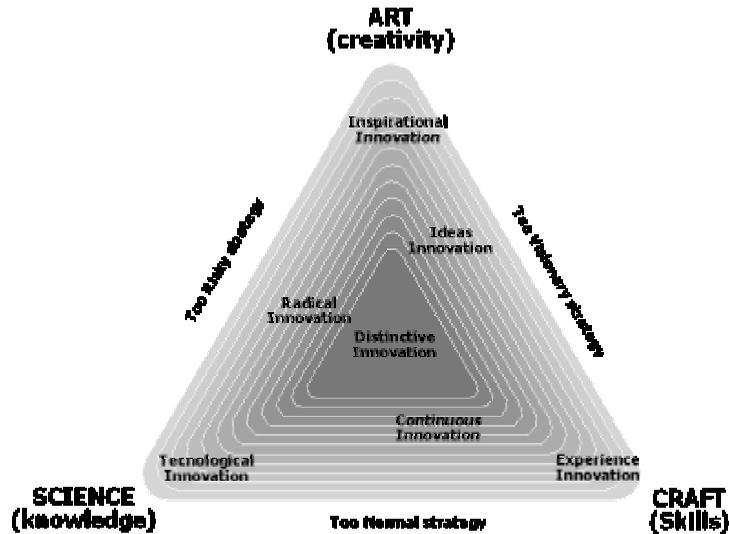
Radical Innovation is also the way to grow today, customers will always make room for something new, useful, and value packed, «*but only if you bring something unexpected and exciting to your customers*». It's not impossible to charge people a premium price for something they love.

A radical idea is one that meets one or more of the following three standards: «*A radical idea has the power to change customer expectations, changes the basis for competition, is one that has the power to change industry economics*».

Innovation typically comes from looking at the world through a four slightly different lens. «*Radical innovators challenge the dogmas and the orthodoxies of the incumbents, spot the trends that are already changing but have gone unnoticed, learn to live inside the customer's skin and think of their companies as portfolios of assets and competencies*».

The organizations must provide the right environment to achieve systemic innovation that is to create a process where peers, not by the hierarchy, can validate new ideas. The goal is to build systems that mimic the marketplace, where ideas, talent, and capital can find one another quickly.

The only limit to Radical innovation is imagination, organizations must also learn to dream, be ambitious, have the capability of self-renewal and re-invent (Peters, 2003) themselves and the industries that they compete.

Table 3 : Authors vision on Innovation/Strategy

Source: Adapted from Mintzberg (2004) *Three Poles Managing Chart*

2.3 FROM A PERSPECTIVE OF STRATEGIC DESIGN

Design is simply “making Sense of Things” (Krippendorff, 1989). The role of Design inside an organization is to materialize the essence of companies, allowing its message and attitude to “make sense” to any receiver; its virtues may be in the creation of the brand, in the communication material, in the goods or services used to face the market, and should embody all the technical and technological virtues of the social and cultural universe of the company’s interaction with the consumers (Deganello, 2003).

There is a strategic (the definition and creation of the way in which a company should communicate and relate to its surroundings and potential clients) and a tactical (the implementation of the defined strategies) side to this intervention, as well as an operational level for carrying out tasks (Gorb, 1990). Recent theories try to tell you how consumer-oriented³⁵ Design tries to create products adapted to real – to some extent still unidentified – needs, and thus become a source of innovation and competitiveness for companies (Vinyets, 2003). The consumer is studied through the observation of the different dimensions: the physical one to study the manipulation, use and access of objects in relation to the user, the cognitive one in order to understand the user’s comprehension and interpretation regarding the cognitive system; the social one to ascertain the social adequacy and cultural one to understand the adjustment of the goods and their value to people and culture.

This method has been evolving, and reference companies such as Ideo Design and Fitch & Doubling are using it as an investigation technique and method to conduct innovative projects in the area of industrial design and this experiment enables them to upgrade the intervention design has to a more strategic level to the companies’ core

³⁵ Based on the study of human factors with tools from social sciences and using the ethnographic method.

business. The knowledge and concrete and bi-directional relationship with clients is currently one of the main assets for the success of companies.

3. EMPIRICAL APPROACH: CURRENT PORTUGUESE REALITY

3.1 ORGANIZATION AND MANAGEMENT

Most Portuguese companies are SMEs and are still geared towards the more classical organization processes, namely focused on one issue: short term financial issues (normally their one strategic plan); centralizing resources to reduce production costs; improving production processes; and the classic view of customer relations stemming from several years oriented towards sub-contracting. These are family-type operations and the corporate vision is confused with that of its head in a monolithic and hierarchical organization. The academic training of the managers is still quite low. These companies are closed to prevent competition and preserve the competitive edge. Most of them will copy from other companies or introduce minor improvements to develop new products, as the management examples connected with innovation are found in multi-national corporations. A recent study³⁶ showed that the management model of companies in Portugal is outdated because it is essentially based on financial indicators. This study highlights the fact that, concerning corporate productivity, that the managers mention – due to their importance – 43 separate financial indicators, and not a single one in the area of innovation and learning. The second and third most mentioned indicators are internal processes, namely stock rotation (28 times) and customer satisfaction (4 times). There are 3 indicators to ascertain the stock rotation and employee satisfaction, but innovation and learning are never mentioned. The flaws in the management model are identified, but the managers cannot implement the necessary measures to change it.

Approximately 73% of the subjects of the study say they have a strategic plan, but gave a time-line of 3 years; less than 50% say they have a formal and shared vision and 63% say they have identified their mission, but only 55% can formalize it. However, through personal interviews, it was possible to ascertain that in most cases the strategic plan is no more than a 3-year budget. Nevertheless, the study concluded that the managers acknowledge that the competitive abilities of domestic companies is no longer dependant on the level of technological innovation of equipments and production processes, but on the ability to maximize and exploit unattainable factors in each organization.

The Portuguese corporate fabric will have to bear structural obstacles to the level of corporate learning related to the success/family tradition, rigidity, hyper-stability, control of introspection and hyper-confidence. Carneiro (2003) established a parallel between Mintzberg's³⁷ configurations and some learning typologies and he infers that the corporate structure has an initially high learning potential, whereas the machine-structure has a low one. There are no relevant innovative structures in Portugal, which are the ones with maximum learning. What few there may exist are small in size and are in specialized areas connected with Design connected to few emergent industries. The following table shows the main characteristics that distinguish traditional from emergent companies:

³⁶ held in 2004 by Active Management Group with 80 companies active in Portugal.

³⁷ 10 types: Enterprising, Machine, Professional, Diversified, Innovative, Missionary, Political, or Networking (complex and polymorph).

Table 4– Dominant concepts and parameters: traditional Vs emerging industries

TRADITIONAL INDUSTRIES	EMERGING INDUSTRIES
Mainly SME	Micro-companies
Family	Spin-offs
Strategic planning	Strategic management
Manager	Entrepreneur
Low academic training	Higher academic training
Focus on fin. indicators	Focus on innovation
Internal processes – tangible Factors	Creation of value - intangible Factors
Individualist	Network cooperation
Internal market	Global market
Machine	Learning

Source: author's chart based on Sousa, 2000

3.2 ECONOMIC AND COMPETITIVE CONTEXT

Portugal is going through a time of strong economic recession, especially due to the slowing down and contraction of internal demand. The Banco de Portugal expects a decrease in GNP from 1% to 0 %. Unemployment increased and public expenditure is still the government's greatest concern, which tries to keep it within the limits of the SGP. In a way the government has changed tack and inserted a positive note of economic recovery, despite the pessimistic outlook most Portuguese have. «*One of the main problems³⁸ faced by Portugal is the fact that it is no longer a country with cheap labour, but it is not yet and attractive country where human resources are concerned, as workers lack skills and innovative dynamics*» (Simões, 2003).

According to Simões, other problems Portugal faces are: insufficient internal innovation dynamics (shown in the Innovation Scoreboard); limited skills and limited staff in key areas; “depletion” of financial incentives as a compensation for weaknesses; and increased competition from CCEEs, namely Hungary, Poland and Czech Republic, about to join the EU and future receivers of many community funds to strengthen their potential for attraction. However, there are positive aspects and stronger points that must be highlighted, namely: taking part in the EU and EMU, the employment atmosphere, the workers' flexibility and ability to learn, quality of life and security.

3.3 INNOVATION CONTEXT

Innovation is a very fashionable word with Portuguese managers and entrepreneurs, as “quality” and “excellence” were in the 80s and 90s. Innovation is still seen as an expert area, i.e., it has not become an inside concern for companies, one for which all workers are responsible. It is still linked to sheer creativity for which only a few of the company’s brains are responsible. Portugal sports a few cases of world-wide recognition of innovation, as are Via-Verde, SIBS’s Multibanco or TMN’s pre-paid phone cards for mobile phones. If, however, we look at the statistics on innovation, Portugal is far from the European average. 2003³⁹ indicators from Innovation Scoreboard, show Portugal as being still in its embryo stage where innovation is concerned: we are EU’s second lowest country when it comes to I&D; the number of patents registered is below the European average. If on the one hand the site is bleak, it is also encouraging, and an opportunity to make things happen.

There are several reasons for our rank: we are a country of inventors (one of the countries worldwide with most awards) but not innovators (Freire, 2000). Portugal was eliminated from the list of the last edition of Global Entrepreneurship Monitor (focusing on the entrepreneurial initiative levels in 29 countries), because our levels were minute compared to the European average. In fact, the origin of the problem is to confuse creativity with innovation. The former is a human trait, stemming from thoughts that generate new ideas, whereas the latter is a “process of creation and introduction of something new into the organization or into the market⁴⁰.” (Freire, 2000). However, the main obstacles that hinder corporate innovation in Portugal are the structures very focused on Core business, the managers’ mentality not open to change, reduced corporate training, lack of internal tools and processes, culture and values that are afraid of taking risks, lack of corporate cooperation, not sharing of experience and knowledge and minute connection to scientific knowledge, namely to universities, who also research centres not in tune with the needs of the industry (Costa, 2004).

In the last decade, there was major focus on process innovation, as it was necessary to renew the production processes and improve quality, due to the subsidiary and community angle of the investments. The Portuguese leaders in innovation are some major companies in the traditional sector or micro-companies in the emerging segment. These are already born in innovation centres⁴¹. This happens because thus far innovation has not been a strategic priority to most companies, especially to SMEs.

Within the traditional sectors, innovation in the creation of new goods and services is emerging in specific sectors, such as telecommunications, stock market, cork, footwear, textile and some food areas, while in the emerging sectors it is related to companies that produce technological development, namely software, drugs, biotechnology and telecommunications. A greater focus has been put on the reciprocity between brand/innovation, as the brand lends credibility to the innovation and the innovation feeds the effect of the brand (Freire, 2004). In Portugal the domestic consumers are not yet so active that they appeal to innovation, because they are not demanding, settle easily and have little relationships with companies. The recession made managers

³⁹ These indicators are divided into groups according to indicators related with human resources, knowledge creation, knowledge transmission and application and financial innovation, product innovation or market innovation.

⁴⁰ Creativity is indeed a necessary condition for innovation but it is not an enough condition to innovation. It is important to bring together the innovators (reinforcing their commercial competences) and the Portuguese companies (through a culture wide open to internal and external innovation proposals), in order to be able to grow from a sustained form of creativity towards invention, accomplishing a successful innovation continuously.

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more aware of the importance of innovation, as the crisis was deeper because there no brand-projection and no new goods and services were created.

Table 5 - Innovation: Traditional Vs emerging industries

<i>TRADITIONAL INDUSTRIES</i>	<i>EMERGING INDUSTRIES</i>
Looking away from Innovation	Innovation is the reason of developing a company
Marginal to business	Core business
Little investment in I&D	Part of the profit is invested in R&D
Process innovation	Radical Innovation
Improve to reduce production costs	New-to-the –world, products and services
No link to scientific knowledge University	Usually the start-ups are directly connected with university scientific research
Innovation through copy or improving good/service	Innovation through the value of new ideas
Success linked to large or multinational companies	Success cases linked to young academics with entrepreneur spirit
Internal-market oriented	Global market orientated
Individualist view of innovation as a competitive edge	Cooperation and shared knowledge

Source: Author's chart based on Sousa, 2000.

3.4 DESIGN, STRATEGY AND INNOVATION

We can give a proper image of the current state of the intervention of design in companies, from the point of view of innovation, using three separate realities:

a) There are cases of success, basically where you have clear corporate strategic vision and thought, where design was first integrated as part of the strategic conception of the whole project and then used in managing the various interventions in implementing and developing goods and services, such as Mglass. This sort of intervention will normally either integrate an institutional agency such as CPD – Portuguese Design Center, or design companies will develop it with greater know-how in the various design areas, like Brandia did for the re-branding of Galp Energia.

b) There are many examples of design being active in the end of the development process of a new product (normally through copy) to give the product a “new face”, according to the fashion trends. This type of intervention is normally carried out by a designer who specializes in product or equipment design. In this case design can only perpetuate or postpone the death of this company in the present economic context.

c) There are also cases of companies that look to design as a last resource. They don't know what, how and with which means to produce nor which funds can be allocated to this project.

This scenario opens a number of possibilities and opportunities that will be ultimately up to the Portuguese designers to create their own mechanisms to make the best of and defend the professionalism and competencies inherent to this subject matter.

4. FORCES OF CHANGE AND SUCCESS REFERENCES

Concerning the forces of change, we will focus on the factors pertaining to the incentive and innovation that strengthen the strategic role of Design. We had one basic principle in the current economic and competitive scenery: we must build a new image of Portugal and show it as being a productive and technology-oriented country. Portugal's image is important to the international competitiveness of our companies, regarding the perception of value of goods and services made in Portugal. The decrease in perceived value is shown in traditional goods (for example: for the same quality level, the mark-up price of an Italian shoe is 20% to 30% above that of a Portuguese shoe) and mostly in more technologically advanced goods (Simões, 2003), reflected in greater demand in specifications and lack of trust. On the one hand the image the Portuguese have of themselves has deteriorated and there is an uneasy feeling that conditions and weakens the commitment of the people; on the other, the way other countries and people see Portugal reflects a country where tradition outweighs innovation and sun outweighs work. We must radically change this perception as a strategic development factor.

An important number of new-generation Portuguese entrepreneurs started the initiative "Compromisso Portugal". The goal is to introduce a more optimistic approach and change corporate attitude and self-esteem to more favourable and ambitious levels, expressed in the document "100 ideias para mudar Portugal" (100 ideas to change Portugal). There have also been some "agents of change" with some institutional weight striving to change the status quo, such as the creation of COTEC Business Association to promote Innovation, initiated by the Portuguese President and that has the support of the Portuguese corporate universe. Its goal is to publicize and create a Portuguese innovation programme. Internationally, the aim of this project is to work with COTEC Spain and COTEC Italy (other countries of southern Europe may join) to shorten the innovation gap between northern and southern Europe.

The link between companies and universities and the role of innovation centres such as technological parks and "company incubators" have also been crucial to the development of this area in Portugal.

The fact that Portugal was chosen by Microsoft, to test the land-lines of digital TV shows how easily the Portuguese consumers adjust to new technologies (another proof is the success and penetration rate of cell phones).

4.1 SUCCESSFUL CASES OF TRADITIONAL INDUSTRIES

Some companies in Portuguese traditional sectors have achieved international recognition. These cases are usually linked to larger-sized companies, which are not representative of the Portuguese entrepreneurial fabric. In the real estate sector, Sonae (shopping centres in Spain) and some Portuguese footwear and textile and clothing companies have re-invented their business, professionalized their management, adopted more current

business models, such as Franchising and these chains may be considered role-models. For our study we'll look at Mglass, as Design already plays an important role.

MGLASS

Mglass was started in 1999, as a way to turn a centuries-old traditional industry with a hard time staying afloat. Mglass is essentially a brand that represents the glass industry in an area (Marinha Grande, Leiria, Alcobaça). It is made up of 18 companies in this sector. It is a case-study that touches the main topics mentioned: its management has strategic innovation, it created a brand to maximize and valorize the productive capabilities of this sector, according to a new commercial stance and attitude more suited to the current competition scenery. It is a across-the-board, inter-company cooperation project as a way of beating and overcoming the obstacles internationalisation poses. Where innovation is the main strategic goal.

The Mglass objective is to promote the glass cluster of the Marinha Grande region. The intangible values of the marketing proposal and the Design concepts are present in the Brand creation, in the promotional and communication materials, on the product lines around Houseware, and gave a lot of attention on the development of special designs POS. The ultimate goal is to achieve new design-based recognition of Portuguese glass within new trends of consumers' spirit. Mglass resorts to several Portuguese and foreign designers to create glass pieces, since design has a strategic role in this company's management.

Success indicators: since Mglass was launched, both in the national and international market in 2000, the investment on Marketing was around 356 million PTE, in 2004 the total volume of sales should generate one billion escudos, the Mglass products will represent a total of 37% of the Portuguese hand made glass market and 5% of the Crystal sector. Another indicator is that the penetration on new markets as US as been successfully done.

4.2 SUCCESSFUL CASES IN EMERGING INDUSTRIES

Focusing on niches or “incubators” for innovation in emerging industries is paying off. Some companies in this sector have achieved international recognition, both through awards, as through publication of case-studies promoted by internationally acknowledged universities such as MIT and Harvard Business School, or even in international magazines and newspapers like Fortune or Liberation where the exponential growth of turnover, international projection, i.e., opening highly competitive spin-off branches in the USA, Spain (Critical Software, Ydreams), inducing creativity and innovation, have been singled out as role-models. Companies like Outsystems – chosen by Fortune magazine as one of the Coolest in the world, or Chiron studied in MIT as a case of entrepreneurship, or Critical Software the only SME chosen for the consortium developing post-3rd gen. mobile communications and developing projects for NASA and also Ydreams, one of the world leaders in mobile entertainment, show that we, as a country, need to follow these companies' models of internationalisation success in other more traditional sectors. It all comes down to entrepreneurship and to a new attitude towards the global market.

YDREAMS

Ydreams (“Smile, you're Mobile”) is a Portuguese company, a “spin-off” of the Science and Technology Faculty of the Universidade Nova de Lisboa. It has a technological basis and is geared towards development of

interactive and network games for mobile phones and support technologies for VR. “Undercover”, a game they produced for Vodafone, is a success story, because it is a strategy game and created a loyal following for Vodafone consumers, who use the company’s website to play and compare strategies and ranks and to create clans. This makes it the first mobile phone strategy game with a visual interface. This approach not only encourages using the Vodafone service, it is also an important source of data-collection of quality data on this consumer type or group.

This company also explores the VR aspect. They created a virtual flight over Portugal for Expo’98 and for the presentation of Euro 2004 and together with Designer Henrique Cayatte, Ydreams created a virtual space that enables visitors to have unforgettable experiences, like taking part in a virtual football match, side by side with their idols. Some success indicators: billing went from 1 million Euros per year to an estimated 5 million in 2004; opening Ydreams in Brazil and Spain.

5. SOME INGREDIENTS FOR A MODEL OF RADICAL INNOVATION

We say that firstly it is essential to promote an approach between both sectors. For the companies in the traditional sector it is crucial to be aware of disruptive changes in industry, to habits and changing role of the consumer and to the impact the new technologies may have on their business both concerning the development of new radical products, as in creating new distribution channels and interfacing with consumers. It can also be a financially rewarding area for companies in the emerging sectors. Design has the role of humanizing new technologies such as the wireless, artificial intelligence or nanotechnology (Pralhad, 2004) bring into the development of these goods a social, cultural and physical angle, and create more than simple products, they generate new experiences that give the consumer the urge to buy or that make him or her relate to a given product and, as a result, to the company that makes it, as in the case of the interactive exhibition of Euro 2004 by Ydreams/ Cayatte.

A comparative study in quality made to companies of both sectors, allowed us to define some critical factors for success in organization: network corporate cooperation, a logic of a learning organization, consumer geared, to make him/her the centre of the innovation project, creativity-inducing environments borderline confusion and chaos, ambitious business perspective and a taste for risk, together with taking mistake as the engine of true innovation, valorizing ideas, integrating several skills as a potential for radical innovation, making all responsible for innovation, stimulating team-work in search of new radical solutions.

An example of integrating radical innovation is the development of the Galp Biomarketing system. This system integrates biometrics as a relationship between the consumers and a company, in this case a traditional one in the energy. By touching a single button the system acknowledges personalizes the contact with the consumer in a non-intrusive way, and the consumer can then pay for goods, receive fidelity prizes, and increase time and comfort in the relationship with the brand. This example strengthens the role of design, because the multimedia gear this service created won a design award, as all the interface was developed according to design competences to make this new to the world and new to consumers technology, as user friendly as possible and it may become a positive experience for all those who first interact with the service.

6. FINAL CONSIDERATIONS

In a world where Schumpeter's creative destruction seems to find no stable pauses, we see that learning and radical innovation triumph over adaptation. This makes the following aspects take on a key role for successful managerial practices, where design has a strategic role, both in emerging and traditional industries: proper perception of the challenges of the new economy of the unattainable, proper adjustment of the company to the current competitive situation and market dynamics, putting more stock on knowledge and learning organizations, motivation ability, sustaining stimulus that favour lifelong learning, knowledge of network corporate cooperation, learning in the market and from the market through constant experience-oriented interaction with consumers. With a proper management stance that allows a company to gain distinctive knowledge and critical mass or size, with a vision and the right dose of ambition, we can then look at the market reality as being global.

Regarding design, for a few years, namely after the 1992 Porter report, when people started talking about the need to invest in I&D, the wrong message – from the author's point of view – was conveyed, that design (working the final aspects of goods: shape, colour, aesthetics) would help the survival of Portuguese companies. At the time it was expected that this highly creative subject would conceive products that communicated with the consumer, even when you didn't know the strategic path of the companies, their position in the market, or the distribution channels they use, etc. This reductive vision proved to have insufficient basis, as we have shown in this article, when faced with a tough competitive scenery, the structural problems the Portugal faced and still faces and a corporate fabric that has little entrepreneurship, where only an integrated intervention based on a revolution of the companies' shape may bring about the necessary changes to achieve success. For this we need a solid, coherent and visionary strategy.

In this case, the role of Design in the companies is and should be strategic, in the sense that it must be present in the multi-disciplined knowledge teams that try to create a radical innovation of business. Integrating consumer knowledge on all levels: physical social and cognitive (Vinyets, 2002) and an ability to have a social and technical reading of design (Cova, 2002) in developing new projects, will be, together with other complementary knowledge like Marketing and Production, the best way to find new paths for the companies and for the development of new, diversified products or services. On the other hand, the recent consumer approach, acknowledging them as active players in the strategic development (Prahalad, 2004) in a framework of valorising the creation of new interfaces between the consumer and the company (Prahalad, 2004 and Peters, 2003), lends weight to the idea that design is really a strategic tool (skill or soft skill) in today's corporate reality, also due to the integrative and wide-reaching character design has, i-e-, the company's image, the brand, the communication, the product, etc...

We leave a hint for future studies, as we think that with the opportunities in the area of radical innovation, design companies must also re-invent and re-organize themselves in order to gain more competence regarding strategy, management and marketing, to better adjust to the reality of the market and develop solid managerial work, promoting a culture of team-work and cooperation, so as to be able to generate radical innovations both for companies as for the development of new products, services or processes. An international example of this aspect is IDEO Design's success. Their culture of organization centred around creative learning with multi-discipline knowledge teams, is currently one of the areas this company sells to its clients. This would make it possible to fully assume Design's strategic role in the implementation of radical innovation strategies in the companies.

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