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CHOOSING TARGET SEGMENTS IN MULTIPLE EMERGING MARKETS

Microoled, a start-up exploring the “smart glasses” market

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This chapter highlights the importance of adopting a marketing approach very early on in the technological innovation process. It is based on the approach used by Microoled for the development of its smart glasses in a highly diffuse market. Three lessons can be learned from this case. Firstly, the segmentation carried out early on by the marketing function allows information on the market to be rationalised as far as potential applications for the technology are concerned. Secondly, the diagnosis approach used enables the most relevant applications to be selected and a more precise market position to be defined based on identified market expectations. Finally, the exploration marketing approach helps set up the R&D calendar to take into account the urgency of developing solutions for the first clients whilst ensuring the mid-term development of the company. We therefore introduce the concept of “early marketing” and underline the key role that it plays in defining the client value proposition.

The customer value proposition is the cornerstone of any Business Model. In the case of the creation of new activities, it is of major importance because it is the first brick in the process of developing a platform of activities. Indeed, little exists prior to it whether we are talking about acquired customers, professions, processes and organizational resources or even the choice of strategic positioning. If we consider the specific case of start-ups based on technological convergence—typical of areas such as ICT and micro and nanotechnology—the actual development of the first offer raises questions and sometimes concerns for marketing. In this chapter we focus our attention on three of them:

- | How to choose one or several options from a multitude of potential applications of the technology? Can marketing provide the strategic input that will be necessary to permit the definition of a space for innovation in terms of solution performance and target market segments?
- | How can the right balance be found between the urgency of finding the first customers and the necessity to prepare strong mid-term growth? Indeed, in order to grow, technology start-ups need to create a break in a new market while to start, they need to make less risky incremental innovations on niche markets. How can marketing enable reconcile these two requirements?
- | Finally, to attain a high level of diffusion of an innovation, how can a position be found that will enable the company to “disturb” incumbents in the future? How can marketing help a start-up colonizing new markets prepare itself against the phenomenon of the “Fast Second” described by Geroski and al. and avoid being eaten-up by these large so called “consolidation” companies? On these major issues, understanding the role and the contribution of the marketing function is essential. These are lessons that we will bring from the Microoled case.

MICROOLED’S SMART GLASSES: A BALANCE OF MARKETING MATURITY AND THE MATURITY OF AN INNOVATION CONCEPT

Microoled is a young company founded in 2007 by two former engineers of the Thomson Corporation with the vision of developing future generations of miniaturized screens. The company specializes in the development and manufacture of solutions based on the OLED technology (see box 1 on applications of miniaturized screens), for which it has an exclusive license to a patent previously acquired by the CEA in France.

We can distinguish the existing markets from emerging ones in this area.

The former include flat panel displays for consumer electronics which are mass markets. The industrials working in these markets are under permanent constraints of price and quality and seek to continuously improve the technical performance of their products based on known consumer criteria: image brightness, contrast, response time, resolution, angle of view, colour, life, energy, size, display surface. In this context, the OLED technology is technically more efficient for flat panel

displays than for video at real speed, in colour with a luminosity and level of detail unobtainable by other techniques.

The second concern a number of new markets which first emerged in the early 2000s. They involve integrating the same kind of flat screen, but miniaturized, for applications such as mobile phones and glasses for eye surgeons, in order to make electronic information available in a number of forms. OLED technology allows for the use of flexible substrates such as organic substrates rather than glass, which opens up new fields of applications.

Box 1. The applications of miniaturized screens and OLED

In 2009, the company is in the process of industrializing very high-resolution screens for applications which were to target two established markets: the consumer electronics market to equip cameras and the professional electronics sector to equip medical equipment, the defence and security sectors and communication media. The strength of Microoled's solutions in these markets is their so-called near-the-eye (Figure 1) solutions which are comfortable for the user and make for easy reading as well as providing clear images projected into the field of vision. Tests are underway by companies, clients of Microoled, to validate the performance and quality of the products. In the short term sales development is expected to be very high.

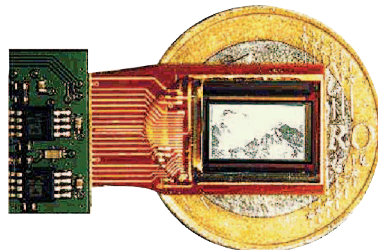


Fig. 1: A miniaturised Oled screen, made by Microoled

Despite this situation, the founder and CEO of the company is not satisfied about the idea of development through established markets involving large volumes and intense competition. At best he considers the success of the proposed solutions will tempt a major who will easily be able to take over Microoled. The CEO therefore feels the need to project the company's vision further in time, to the medium-long term, in order to identify how *"Microoled could produce a breakthrough with a new generation of miniaturized screens"*, which could make the company sustainable. This is coherent with what managers of technology based start-ups tend to share: *"We must create this breakthrough in the medium term if we are to survive and grow"*. For the CEO, an offer can be found that will enable the company to differentiate themselves in new markets and which will enable them to grow without competition being able to react fast enough to stop them.

Intuitively, the CEO expresses the vision of a breakthrough in the field of smart glasses for sports. They are based on new generation technology which provides an integrated vision on one eye (an effect resulting from the projection of a translucent image in front of the glasses). A low-resolution screen shows information obtained from the surroundings using wireless technology. The market is not really defined. Numerous potential applications appear at once: information in “connected” towns, mobility, sports or even B to B industrial activities. Microoled, through a number of targeted interviews, notably confirmed the strong interest in France and abroad in the sports arena for this type of technology. The proposed solution is ten times more powerful than the best in the market currently available for cyclists, and on several aspects: screen size (small size and the better visual aspect of the glasses), luminance (through the high pixels density) despite the small screen.

However, the risk level perceived by the CEO remains extremely high: the technical investment is estimated at 1 million euros for an uncertain financial and commercial return. He therefore asks the start-up’s marketing manager to identify, amongst all possible applications, both within and outside sports, those that will enable the company to benefit the most from its technological advance. This means finding applications that benefit the most from three characteristics of the Microoled solution: energy consumption four times lower than equivalent devices, a high resolution image on a very small surface due to a high pixel density and its small size. Preference is to be given to mass market offers, due to the initial positioning of the company’s first products, though this is not seen as a constraint.

The marketing manager set the objective of identifying, qualifying and prioritizing market segments for smart glasses in two application domains: sports and “communicating-cities”. At the outset this involved documentary research which allowed the following observations to be made:

- | Numerous attempts to market smart glasses have failed in the past, with the notable exception of a remarkable Japanese company, who became the market leader with solutions primarily for sports applications;
- | One of the reasons for these failures lies in the aesthetic problems of the first glasses which are not offset by the perceived usefulness of the information functions;
- | As such, the sport is potentially more promising because there is more demand for the informative functions than in urban tourism. The cities currently have considerable difficulty in identifying relevant information;
- | Finally, it is likely that the Japanese market be the most relevant segment for the commercial launch of smart glasses because of its high demand for novelties and the fact that it is relatively less sensitive to the aesthetic issues around this type of object.

At this stage the decision was taken to focus the marketing analysis on the sports segment, in coherence with the CEO’s intuition. The next step involved identifying market development levers, within a semester, to overcome the obstacles that had caused so many failures in the past. Three types of lever were identified:

1. Understanding the factors that had led to the success of the Japanese company that Microoled could re-use;
2. The identification of the market segments with the highest demand, in other words those which have “critical areas” where Microoled’s solutions can provide significant performance gains at conditions that would be acceptable for the clients;
3. The setting up of an ecosystem of actors, specifically involved in the breakthrough innovation led by Microoled, in order to influence the environment and to set-up a complete value chain for the production and distribution of the innovation.

Based on these first findings, three actions were deployed.

The first concerned the organisation of a mission to Japan to learn from the market leader, whilst at the same time, testing a pre-market launch of a solution. This strategic assignment was made easier as the head of marketing is Japanese and easily obtained a rendezvous with the Japanese leader in smart glasses for

sports. This first meeting is viewed as a small victory by the general manager due to a few previous negative experiences. The information obtained during the interview was very useful, even more so as Japan is reputedly the world leader in OLED technology. The market actors, and notably the users, are well aware of the potential functions and the useful information that could be provided by glasses thanks to OLED technology. They spontaneously participate in the definition of the first models and help identify areas for improvement. It is through this collaboration that the importance of the aesthetic issues was highlighted, though it wasn't deemed a blocking factor for the users (On the first glasses to be equipped the electronic devices were quite visible.).

In fact, these Japanese "pioneer users" appear to have opened the way to a mass market extending over and above the Japanese market, which demands high quality products and services, from reactive professionals, sold at attractive prices in an intensely competitive environment. The clients are particularly volatile and don't hesitate in moving from one supplier to another where the price is better even where this means going for a less technically advanced solution. The distribution of the offer appears to be a critical element in determining the success or failure of the innovation along with the necessity of having a differentiated offer as far as technical performance is concerned. More specifically, the performance criteria involve high image quality (contrast, luminosity, colour saturation) and a complete solution with an interface controller.

Another marketing conclusion for Microoled concerned the necessity of being present locally on the Japanese market in order to be able to benefit from the feedback that this unique market can provide in testing innovative concepts in this area. This puts into question the company's roadmap as the intention had been to target Europe initially. Another critical point involved the constraints on technical quality, obligatory for the credibility and image of the company and its products, even if it means reducing the number of informative functions in the smart glasses (in order to limit the risk of dysfunctions). From this point on, the second marketing action was vital in that it would enable Microoled to identify the required technical characteristics of the glasses and the segments that could be targeted.

This second action involved carrying out a qualitative survey of practising sportsmen in a number of very different sports. The retained approach used was the one recommended by P. Millier in his book "The study of markets that don't yet exist" (2006) (*"L'étude des marchés qui n'existent pas encore"*). Documentary study and an analysis of patents in the area enabled the team both to identify the applications and their functionalities and the actors involved in providing real time information to sportsmen and women. From this information they derived a matrix of potential applications, based on the imagination of the Microoled teams. This enabled them to define a list of potential clients in the various sports as well as an interview guide aimed at obtaining more information on their potential needs as well as their constraints and purchasing habits. Sportsmen and women, associations and sports federations were consulted and following around thirty interviews a first market segmentation was drafted by the marketing manager. The segmentation is illustrated in Figure 2.

Critical (perceived) users needs

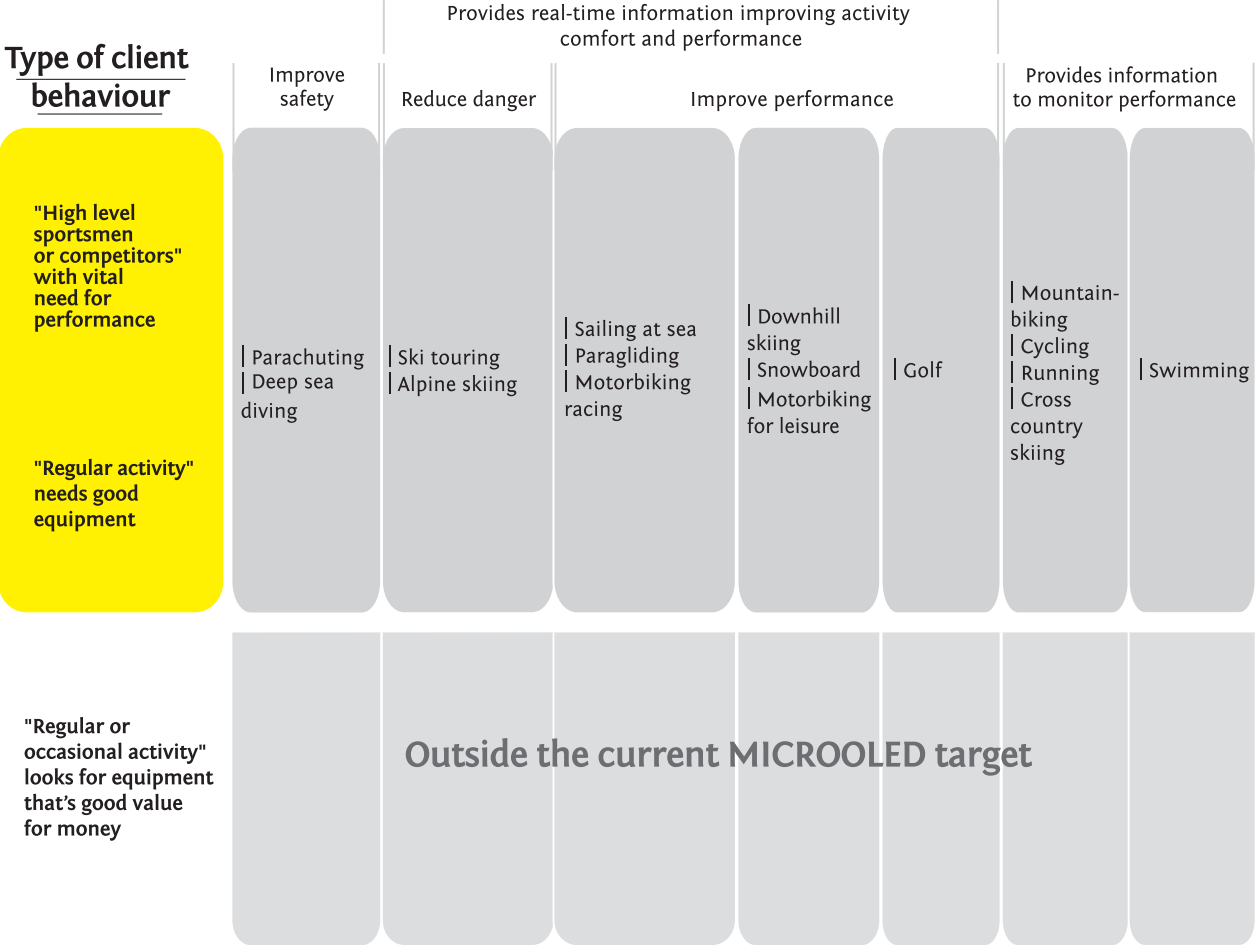


Fig. 2: The market segmentation for intelligent glasses in sports (SOURCE: MICROOLED)

Each identified segment was analysed to evaluate its attractiveness, the expected benefits, and Microoled’s strengths in comparison with competing solutions. The criteria of autonomy and the size of the device systematically emerged, as strong conditions for acceptance, and therefore purchase, for potential buyers. The technical characteristic of low-power appears to be the key to the success of the final solution. The marketing analysis of each segment resulted in positioning Microoled as shown in Figure 3.

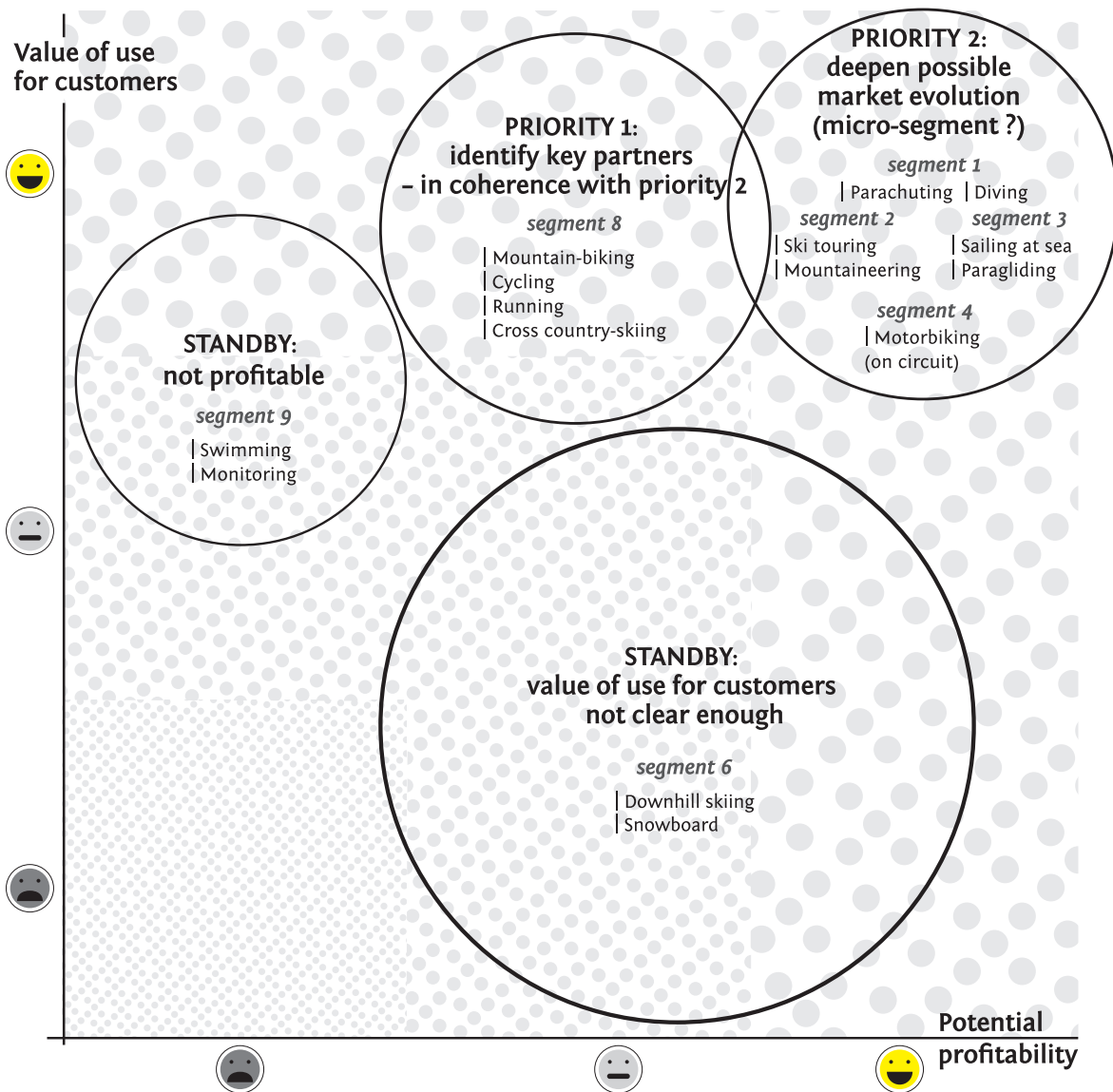


Fig. 1: Position of Microoled market segments

- | The marketing recommendations pushed two priority segments:
- | The “monitoring” segment for endurance sports such as cycling, running and cross-country skiing;
- | The “alert information segment for parachuting and deep-sea diving.

Several developed scenarios could therefore be considered. The scenarios will enable management to get actions underway more serenely than if their decisions were based on intuition alone. With the aim of building scenarios and then getting actions underway the marketing department has a third mission that of identifying partners notably for the distribution of the innovation.

The third marketing action involves setting up an ecosystem of relevant complementary actors around Microoled’s technical solutions. This phase is crucial but difficult in that the company is still in the early phases of innovation; the market segments are emerging and the company doesn’t (yet) have an offer to show, or prototypes, nor market studies or even its first clients to help persuade potential partners. What is therefore required is to set-up exploration partnerships rather than go straight into sales partnerships or resource sharing partnerships. Microoled opts at this stage for partnerships with actors with the same innovative approach favouring a value network approach through patent application. A first potential list of partners was drafted along field of work. The potential partners are then sorted according to

their interest for the company before attempting to get into contact. Their interest was determined along two lines. Firstly the facility of access was evaluated notably going through such things as R&D clusters and trade development structures. Secondly their compatibility was assessed in terms of market development objectives and distinctive resources. In this way the marketing department paved the way for the setting up of innovation partnerships and alliances.

Learning from the Microoled marketing approach

This case adds to the marketing innovation approaches that are already widely known. Here, we propose the term “early marketing”. The case highlights the important role played by marketing very early on in the innovation process, notably in contexts involving innovation breakthroughs, a high level of uncertainty and irregular rhythms of innovation. The upstream roles of this “early marketing” emerge from this case essentially on three levels.

Marketing assisting in identifying new paths of innovation

It is generally accepted that innovation marketing occurs well before the development of an innovative concept, at the looking-for-ideas stage. The Microoled case does not present the identification of new ideas as being a matter of priority, nor even an issue. The real question here concerns the definition of the perimeter within which ideas are generated so that they then have a chance of being selected as being part of the strategic logic of the company. This implies a marketing function capable of capturing conflicting signals on trends from unexpected, unusual sources of information, not determined in advance (Bessant and Tidd, 2008). In the Microoled case, the initial material appears to come from an intuitive leader with close ties to a network of visionary entrepreneurs and business leaders recognized for their innovation dynamics.

¹ Ambidextrous organizations are defined as being organizations with the ability to simultaneously conduct operations and carry out exploration activities. In the case of Microoled, this involves being able to provide resources and expertise to explore new applications involving OLED technology.

The implication here is a marketing function changing paradigm; getting out of logics and proof, factual descriptions and rational decisions on markets and their dynamics. Marketing, having changed paradigm, can adopt a support role in making strategic decisions by amplifying intuition and emotions on converging information and indices. In this sense, this means more proactive marketing which is able to extend the roadmap timeframe of the product market beyond 2 to 3 years. To this effect, it would probably be valuable to draw on business intelligence approaches based on weak signals. One of the new challenges of innovation management is that of multiple dynamics requiring ambidextrous organizations as defined by Tushman and O’Reilly (1997)¹. The marketing function has a vital role to play in the development of this organisational capacity. This mission is not automatic as it strongly questions the acquired knowledge, know-how and practices of marketing teams.

A MARKETING FUNCTION WORKING TOWARDS THE EMERGENCE OF NEW MARKET SEGMENTS

The approach adopted by the Microoled team is that developed by P. Millier. It involved creative multi-directional research followed by focusing on two key elements of market segmentation:

- | Innovative applications at the crossroads of specific high performance technical functions and the use of these functions in specific contexts that generate critical issues or strong dissatisfaction. This, for example, is the issue of warning functions vital to a skydiver who is systematically and reliably informed, when getting dangerously close to the ground,
- | Attitudes and purchasing criteria of customers who seek the positive result of the comparison between the benefits of a given solution compared to another and the constraints related to its purchase and implementation. This concept is necessarily subjective and entails a direct confrontation between the innovative solution and potential clients.

On the basis of these elements, the marketing analysis enabled the team to qualify and characterise the accessible growth market segments

The Microoled case however raises a number of questions that may complete the approach proposed by P. Millier. Firstly, lessons acquired from past successes and failures appear to be a source of accelerated learning that one cannot acquire from users and potential customers. More than market truths supposed to enable us to reproduce or avoid strategies and markets, these lessons from the past experience of other actors enable us to understand the dynamics of change and the levers for action available to the start-up. Microoled has entered into a “collective intelligence process” with the Japanese society through toing-and-froing between the potential of the proposed technology and the innovation dynamics of the smart glasses market. We are now beginning to understand the co-emergence mechanisms of innovative solutions and new market segments. A high level of uncertainty has to be accepted, even at the end of the segmentation phase, with the quantitative analysis of the size and rate of growth rate of the segments concerned leading to approximate results, and relevant where possible.

In this context, it is interesting to note the lack of attention paid to the usual key data and indicators used for marketing decisions, data related to market tendencies and the behaviour of actors. This last observation brings us to the third function of upstream of marketing in the innovation process, that of the support with strategic innovation opportunities.

MARKETING ASSISTING IN THE STRATEGIC SELECTION OF OPPORTUNITIES FOR INNOVATION

The stake today for any company is not to produce two types of selection error:

1. Omission errors. These are errors that involve not taking the plunge, not going down a road (generally a breakthrough) through not having paid enough attention to it, or not giving it enough credit, or
2. Commission errors. These errors involve embarking on a path that which turns out to be a failure and from which no benefits are obtained.

Marketing generally concentrates on avoiding the second type of error, through learning from past experience; this unfortunately tends to push it into committing the first type of error. The Microoled case suggests another way of selecting innovation opportunities for new markets, by tending towards the ambidextrous organization. This means thinking through internal selection, by the actors from within the organization, and external selection, by the innovation ecosystem which builds on the capacity to mobilise actors around the innovation as well as through joint exploration. The marketing function can be a key player in identifying external partners without whom the innovation would not come into being let alone be marketed. This work entails a considerable investment in time and effort where technological breakthroughs are concerned and where numerous competing solutions can address a very wide range of opportunities. It also requires that these breaks do not come at the expense of incremental innovations, allowing short-term exploitation of the activity-as is the case for Microoled in the field of consumer and professional electronics.

One issue remains unresolved, the transfer of the upstream marketing knowledge to a rigorous but flexible operational marketing function. This knowledge transfer concerns:

- | Product knowledge:
The offer is highly changeable in terms of quality, features as well as options, service and guaranty;
- | Price knowledge:
The price level is fairly high for the first segment, then becomes more attractive with promotions (reductions, discounts), payment conditions and credit options adapted to each target segment;

- | Distribution:
Initially market proximity is required though the importance varies according to market segment;
- | Communication:
Communication moves from one-to-one communication with technical arguments based on performance to broader targets and a more commercial sales pitch.

CONCLUSION

The Microoled case shows the complementarity of traditional models used in managing the innovation process. By using innovation marketing tools, a new more iterative and multi-directional process is proposed (Figure 4).

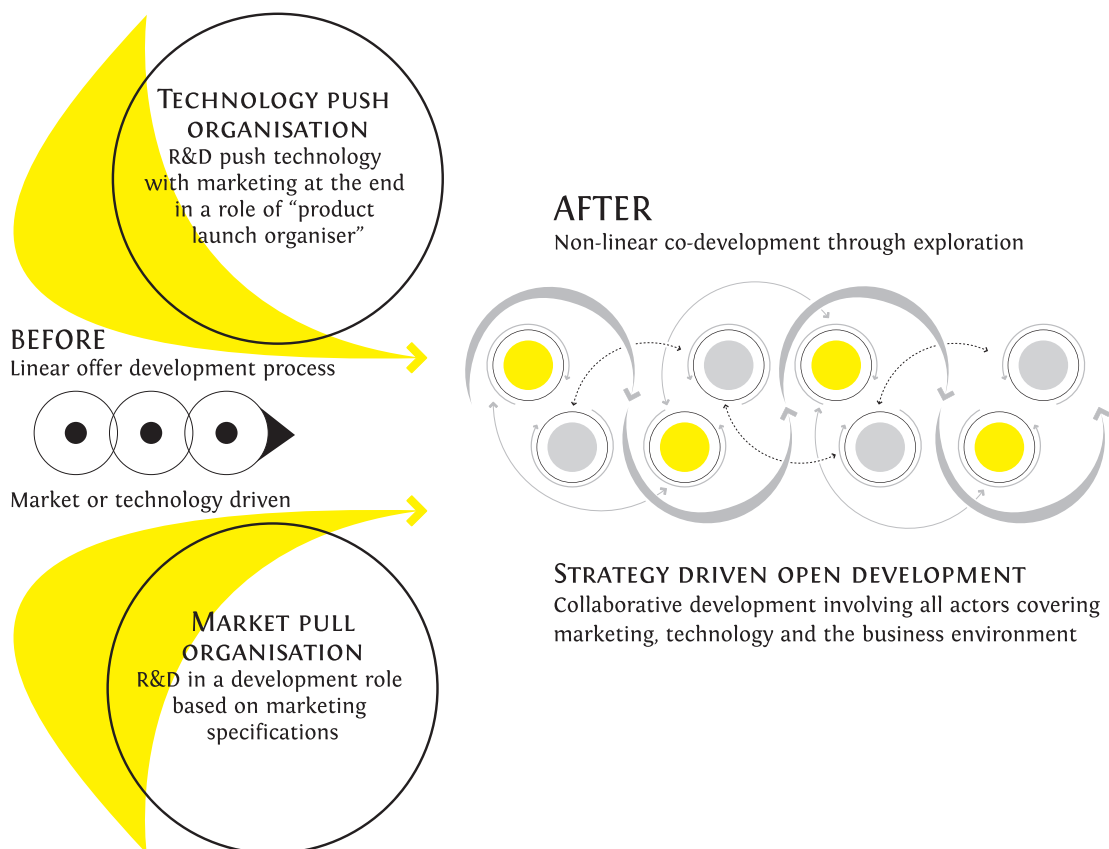


Fig. 4: Innovation management process for the Microoled case

It provides for better and more systematic monitoring of the innovation process and gives it a strong market orientation. The paradigm changes too, moving from a traditional predetermined approach based on static, or stable, factors, to a dynamic process of building and change built on dynamic factors.

What appears obvious today is the need to recognize the important contribution of marketing beyond the operational business process and the traditional operational marketing roles. This is notably important in order to better combine incremental and breakthrough approaches, short-term and long-term orientations in continuous interaction with the innovation strategy of the company. This shows how the issues of organizational ambidexterity according to Tushman and O'Reilly's definition are just as applicable to marketing and other business functions! More particularly Microoled's "early marketing" approach helped make development choices that proved crucial, upstream in the innovation process.