Creating the market for disruptive innovation: Market proactiveness at the launch stage

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Birgitta Sandberg

is working as a senior research associate in international business at Turku School of Economics and Business Administration. She is currently writing a dissertation on market proactiveness in managing disruptive innovations.

Abstract It is not enough that innovative firms are proactive in their product development. In order to develop commercially successful products, proactiveness related to the market is required as well. This seems to be a challenge, especially for firms that are developing disruptive innovations, ie innovations that create their own market. This paper examines market proactiveness at the launching of disruptive innovations. The study begins with an introduction to the concept of proactiveness, which gives the context in which the more limited concept of market proactiveness is defined. This is followed by a brief description of the characteristics of disruptive innovations, considered in the light of market proactiveness. Market proactiveness at the launching of a disruptive innovation is then analysed in more detail, with specific emphasis on targeting. Finally, a case study describes how the market was created for a pharmaceutical disruptive innovation, and assesses the role of market proactiveness in this effort.

INTRODUCTION

Strategy and adaptive capability in firms have been the subject of revived discussion in recent years.^{1,2} Proactive behaviour, ie anticipating changes and even altering the environment, is often seen as a way in which firms can survive and actually benefit from the changes.^{3,4}

Firms creating disruptive innovations are frequently cited as examples of proactiveness.^{5,6} Nevertheless, the role of marketing is quite conventional, often limited to selling the ready product to 'customers who might not even know what they want'.⁷ Thus, although these firms seem to be very proactive in their product development, they may still be quite reactive in their marketing efforts.

The ability to link new inventions to market opportunities is, however, a crucial step, since disruptive innovations create their own market. Innovative

products do not guarantee success if the role of marketing is neglected.⁸ Ignoring the fact that marketing could contribute to the product development process and to ensuring competitive advantage carries the risk of lost opportunities. In any case, as market growth slows and standardised designs are established, the role of marketing tends to increase.⁹ Therefore, in the future many innovative firms will probably face more pressure to increase their proactiveness.

The launch stage seems to be especially important for innovations, since it is the phase in which the investment may already be considerable, but the risk of rejection is still quite high.¹⁰ Market proactiveness may alleviate this risk. Proactiveness, however, is also expensive. The costs of market proactiveness are more justifiable, if it could be targeted to certain groups of prospective customers.

Birgitta Sandberg
Department of Marketing,
Turku School of Economics
and Business Administration,
Rehtorinpellonkatu 3, 20500
Turku, Finland.

Tel: +358 2 338 3230;
Fax: +358 2 338 3280;
e-mail:
birgitta.sandberg@tukkk.fi

The purpose of this paper is to provide deeper understanding of market proactiveness at the launching of disruptive innovations. The subsidiary objectives are to:

- describe what market proactiveness in managing disruptive innovations encompasses
- analyse market proactiveness at the launch stage in detail
- deliberate on how market proactiveness could be targeted at the launch stage
- illustrate market proactiveness through a case study — the launch of a disruptive pharmaceutical innovation, Domosedan®.

The relevance of this topic is assured due to the evident need of innovative firms to develop commercially successful products on the one hand, and due to the present knowledge gap regarding market proactiveness in managing disruptive innovations on the other. There is a very limited number of studies that concentrate on proactiveness in disruptive innovations¹¹, and even fewer that concentrate especially on market proactiveness. Of the existing research, probably the most interesting as far as this paper is concerned is the study by O'Connor and Veryzer.¹² They, however, concentrated on market visioning and its development and nature in technology-based radical innovations, whereas this paper deals with the larger concept, market proactiveness, in which market visioning plays an important role.

THE PROACTIVENESS OF A FIRM

Defining proactiveness

Reactiveness and proactiveness are concepts that have been frequently used

(but rarely defined) in studies on strategy in recent decades.^{13,14} A major proportion of the literature concerning the strategic behaviour of firms reflects a dichotomy between reactive and proactive behaviour.^{15,16}

Reactive behaviour has also been called 'emerged' behaviour.¹⁷ Instead of formulating strategies for unforeseeable environmental changes, firms respond to the changes when they arise.¹⁸ The problem with reactive behaviour is usually the need for rapid action, in other words, lack of time and few options to choose from.¹⁹ Thus, when reactive behaviour becomes the principal tool in the firm's crisis management, there may be trouble ahead.²⁰

Analysis of the concept of proaction is rather scarce. A [pro]active strategy has been defined by Jauch and Glueck²¹ as 'one in which strategists act before they are forced to react to environmental threats and opportunities.' Thus, it seems that sometimes proaction is reaction: it is not reaction to the environmental change, but rather to the symptoms of that coming change. This kind of behaviour could be called anticipatory regulation²² and the aim is to offset the undesirable effects of the disturbance on the outcome. In fact, anticipation could be understood as control of the present (because it is not possible to control the future) by using information on the past, present, and future.²³

Proaction could also be seen as a firm's tendency to influence the environment and even initiate change. Bateman and Crant²⁴ defined it as 'a relatively stable tendency to effect environmental change', and 'a behavior that directly alters environments'. Correspondingly, Aragon-Correa²⁵ defined strategic proactivity as 'a firm's tendency to initiate changes in its various strategic policies rather than to react to events'. In a way, firms can, at least to some extent,

Figure 1 An example of a firm's position along the proactiveness–reactiveness continuum

create their future. They may imagine products, services and entire industries that do not yet exist, and then give them birth.²⁶

Proactive behaviour is defined in this paper in line with Johannessen *et al.*²⁷ who stated: 'Proactiveness is the ability to create opportunities or the ability to recognize or anticipate and act on opportunities (or dangers) when they present themselves.' Accordingly, proactiveness is seen to comprise both reaction to the symptoms of the coming change in the firm's environment, and the creation of changes within it. The separating factor between proactiveness and reactivity is time. Proaction always implies acting before the change in the environment has had a direct impact on the firm, and in practice it often involves reacting to the symptoms of that coming change.²⁸ Reacting to anticipated changes is not, however, enough. In the long run, it is even more important for the firm also to strive actively to create changes²⁹ and to discover strategic options of which management was previously unaware.³⁰

Proactiveness as a pattern

Even though proactiveness and reactivity have been considered determinants of separate classes of firm behaviour, writers^{31,32} have emphasised the fact that the two concepts form a continuous rather than a dichotomous construct. Consequently, a firm may adopt different degrees of proactiveness; it finds its place along the proactiveness–reactiveness continuum and, if necessary, also changes its position relative to either

extreme (Figure 1). This ability to change position is important for the effective use of the firm's resources. Proactiveness is expensive. Monitoring customers and competitors, long-range market scanning and extensive lobbying usually do not come without a significant sacrifice of scarce resources.

The degree of proactiveness, however, also seems to be related to various task and environmental factors.³³ Consequently, the mere position along the continuum may not adequately describe the complex and multifaceted behaviour of a particular firm, even though it may be useful in a general way for comparing the behaviour of many.

Proactiveness can be analysed separately in different functional areas of the firm, eg research and development (R&D), finance, operations, marketing, international and managerial/structural³⁴ R&D, production, marketing and finance.³⁵ Another option is to distinguish between product-related, market-related and process-related proactiveness.^{36,37} Thus, it could be concluded that there are many reactivity–proactiveness continuums, concerning the products, the market and the processes,³⁸ for example, and the firm has to position itself on each of them (Figure 2).

Product dimension refers to reactivity–proactiveness in product R&D and engineering, and in manufacturing.³⁹ It is often difficult to differentiate between proactive and reactive R&D because, as competition often sets pressures on R&D, firms 'have to keep running in order just to stay on

Figure 2 An example of a firm's positions on the reactivity–proactiveness continuums

the spot'.⁴⁰ Market dimension comprises the firm's behaviour related to the market. Since the market-dimension concept is an important aspect of this paper, it is discussed in more detail later. Processes refer to the way in which things are done and include operations and distribution processes, and management and administrative processes.^{41,42}

Thus, the proactiveness of a firm can be seen as a pattern composed of its positions along these continuums. The pattern of proactiveness is not, however, static, but in a state of flux, since most firms constantly verify and redefine the manner in which they interact with their environment⁴³, ie they continuously seek new positions along the continuums.

DISRUPTIVE INNOVATIONS AND MARKET PROACTIVENESS

Characteristics of disruptive innovations

Innovation could be defined in terms of something that is invented for the first time and is a commercial success.^{44,45} Disruptive innovations are innovations that involve significant new technologies, require considerable change in consumption patterns and are perceived as offering substantially enhanced benefits.⁴⁶ They seem to involve unique challenges both for development because of the high level of uncertainty

concerning technological feasibility, and commercialisation, again because of the uncertainty involved.⁴⁷ This high level of uncertainty requires innovation-development practices that have the potential to reduce risk and manage uncertainty, concurrently enhancing the likelihood of success in the market. Since, however, it is difficult for potential customers to articulate the needs that a disruptive innovation may fulfil, it consequently makes it hard and expensive to identify market opportunities and to translate technological advancement into products that meet customer needs.⁴⁸ Furthermore, since the development of these products may span ten to 20 years, or even more, the future needs of customers may differ considerably from their current needs.^{49,50}

Although it is based on disruptive technological capability, new technology is only an instrument in achieving the ultimate goal of a disruptive invention, which is creating revenue and corporate wealth.⁵¹ In order to create revenue and succeed in the marketplace, innovation needs to provide new benefits for customers. By pursuing disruptive innovations firms may replace prevalent methods of delivering value to customers⁵² and provide them with a completely new level of functionality.⁵³ According to Christensen *et al.*⁵⁴ many disruptive innovations enable 'a larger population of less-skilled people to do in

a more convenient, less expensive setting things that historically could be performed only by expensive specialists in centralized, inconvenient locations'. Since the benefits are not previously known, however, they need to be communicated to potential customers.⁵⁵ This communication is not easy in a situation in which the product itself is still nonexistent, and the customers are forced to visualise the functionality and benefits of the proposed innovation merely based on concept descriptions.⁵⁶

Diffusion denotes how a community absorbs an innovation. Disruptive innovations are likely to diffuse more slowly than incremental innovations. Even though there are innovative adopters who are eager to try new products, the market is rather conservative on the whole, and has no *a priori* desire to change its consumer habits. It is often, however, only purchases by the majority that cover the accumulated costs of innovation development, and lowering the adoption barriers is therefore essential. It has been emphasised that the diffusion of an innovation can (and should) be actively influenced by marketing efforts.^{57,58} Market proactiveness plays an essential role in this.

Market proactiveness in connection with disruptive innovations

Consistently with the definition of proactiveness presented earlier, market proactiveness is defined here as either acting based on the information gathered about the market before the situation in it has had a direct impact on the firm, or deliberately influencing and creating changes in the market. The characteristics of disruptive innovations presented earlier explain why market proactiveness is, from this point forward, limited to anticipation and influences on

demand, thus leaving the competition side outside the scope of the focal study. This limitation does not mean that the competition side should be forgotten in managing disruptive innovations: it is merely that the limitation is necessary here in order to allow full concentration on what has been emphasised as the most difficult challenge, ie anticipating and influencing demand.

Demand can be influenced either directly, ie without regard for cognitive structure, or indirectly, ie causing cognitive change which then changes the behaviour. Customer constraints play an important role in the former. A firm may build customer constraints (real or imagined) that encourage purchasing, or it may also try to remove the constraints that prevent it. This can be done by shaping the choice sets, the criteria and the benefit packages that customers buy, for example. Indirect influence on market behaviour focuses on customer preferences. A firm may create new preferences by informing its customers about new benefits of the product, or by teaching them to use it. It may also reverse existing customer preferences.⁵⁹ Anticipating the coming circumstances on the market implies that the firm can spot the first indicators of new market opportunities and risks, and be the first to exploit or prevent them.^{60,61}

Market reactivity means that the firm is market driven. It accepts the market structure as given and does not aim to change market behaviour.⁶² Thus, it concentrates on understanding and satisfying the expressed desires of the customers. (The word 'customer' in this study includes all prospective customers. Thus, they may come from either unserved or served markets. This definition seems applicable here, since customers for disruptive innovations often come from markets previously not served by the firm.) The drawback with

reactiveness is that it is usually short term in focus. Market reactiveness can be measured through the time lag that it takes to respond to certain circumstances on the market.^{63,64}

It could be concluded from earlier studies,^{65,66} that the role of marketing changes during the process in which inventions are developed into commercialised products. Since proactiveness has also been seen as a dynamic phenomenon, changing as firms constantly verify and redefine the manner in which they interact with their environment,^{67,68} it may be further concluded that market proactiveness also changes during the innovation-management process.

Market proactiveness at the launching of a disruptive innovation

According to Urban and Hauser,⁶⁹ launching is 'the difficult task of "making the product happen" in the market'. In other words, if the launch is successful the product becomes established. Various other researchers^{70,71} have also emphasised the critical role of the launch stage. Investment in the innovation may be considerable by this time, and the risk of rejection is still quite high. Therefore, it seems rather natural that anticipation plays a role in ensuring that the innovation will be accepted at the launch stage. Customer reactions are often anticipated through market research before the launch.^{72,73}

The situation may be quite different for disruptive innovations, however. According to a study by Hultink *et al.*⁷⁴ the degree of product innovativeness influences the decisions made in the launch process. Consequently, it has also been argued that it may sometimes be better with very disruptive innovations to be faster onto market and to strive for only minimal market acceptability, rather

than to pursue a complicated combination of not-so-relevant product attributes.⁷⁵ According to Beard and Easingwood,⁷⁶ firms tend to make modifications in their disruptive innovations as a response to customer and competitor reactions during and after the launch. This seems rather natural since the information becomes more valid and reliable as the innovation reaches the market.⁷⁷

Notwithstanding the above discussion on the importance of anticipation and reaction at the launch stage, it seems that previous research has put even more stress on influencing the market. Market preparation, which is aimed at getting the market ready for the innovation by building awareness, is particularly strongly emphasised in the literature.

Understanding how an innovation works, however, or getting information on yet unobservable benefits, does not make it less complex or the benefits more observable. It is, rather, the pre-launch information focusing on the relative advantage and compatibility of the innovation that seems to have the biggest direct influence on trial and adoption. Positioning the benefits against those of other products is likely to improve understanding of the relative advantages.^{78,79}

Using opinion leaders for word-of-mouth communication, and reference sites as a means of acquainting the customer with product benefits, seem to be common in launching disruptive innovations. Moreover, the more disruptive the technological capability inherent in the innovation, the greater is the need for market education. With disruptive innovations, market education may be even more directed towards communicating a vision of the future than with the nature of the technology itself.⁸⁰

Thus, at the launch stage the key issue

Figure 3 Market proactiveness and reactivity at the launch stage

seems to be that the market accepts the new innovation (Figure 3). This compatibility between the innovation and the market may be achieved by making customer-required modifications after the launch, or by anticipating these requirements through market research, for example. Even though both of these strategies seem to be widely used during the launch of disruptive innovations, the literature has emphasised even more the role of active market preparation, ie building awareness in the market and educating customers about the innovation to be launched. Thus, market proactiveness tends to be high at this stage.

Targeting innovative adopters

Because of the considerable expense associated with proactiveness, it would

certainly be more cost-effective if market proactiveness could be targeted at certain segments. In any case, previous studies have indicated that targeting increases the diffusion rate, provided that the firm targets the right people. Conversely, targeting the wrong people may inhibit diffusion completely.^{81–83} Innovative adopters seem to be a natural target group for most disruptive innovations at the launch stage. They consist of two different groups of people: innovators and early adopters.⁸⁴

Innovators appreciate innovativeness for its own sake and are genuinely interested in learning about new innovations. They just want to try it in order to see whether it works. Thus, they are adventurous and also accept setbacks. They play a gate-keeping role in the innovation diffusion process, which makes them an important target group.^{85,86}

Early adopters are visionaries who are looking for breakthrough improvements to their current productivity and customer service. They want to be the first to exploit the innovation with which they can achieve a new competitive advantage. They are not very price sensitive, which makes this group easy to sell to. In addition, they are often very willing to serve as very visible references. After all, these people are respected among their colleagues because of the successful use of new ideas and, in order to guarantee this esteem in the future, they are willing to make decisions on disruptive-innovation adoption earlier than their peers. They represent a challenge to the innovative firm, however, in that they are also very demanding in terms of both innovation properties and time frame.^{87,88}

It is worth emphasising that innovators and early adopters require partly different approaches to market proactiveness. Market preparation is used to make them aware of the innovation and skilful in using it properly. Building on awareness is rather easy among this group since they actively seek knowledge of new disruptive innovations. As Moore⁸⁹ writes: 'Typically you don't find them, they find you'. Both innovators and early adopters are often eager to participate in conferences and seminars, but require different programmes. The former are eager to know more about the technical capabilities, whereas the latter want reliable evidence of the promised overall benefits. Consequently, these same differences should be reflected in the education of early innovators about the innovation. The education will be effective as long as it emphasises the technical details for the innovators and the potential for the early adopters.⁹⁰⁻⁹²

Pre-launch market research targeted at innovative adopters is likely to be rather stimulating since they eagerly participate

in the product development and are particularly pleased to play a part in the innovation process. On the other hand, market research may also be rather demanding because early innovators in particular often insist on various modifications, which quickly begin to tax R&D resources.⁹³

The post-launch benefits and drawbacks in terms of reacting to the requirements of this group are rather similar as when market research is conducted before the launch. Early innovators, however, usually do not represent typical customers, and it might therefore be more beneficial to target other categories of potential buyers after the launch.⁹⁴

CREATING THE MARKET FOR DOMOSSEDAN®

Domosedan® as a disruptive innovation

Innovations, as stated in the definition, require commercial success on the market. This also poses challenges for the researcher. Longitudinal real-time studies on the innovation-development process are generally not feasible, because it is only at the end of the process that it becomes clear whether or not the invention ever became an innovation. After all, only a fraction of inventions eventually become commercial successes. Retrospective studies with all their weaknesses are therefore often the only realistic option available for the researcher. On the other hand, if the innovation is disruptive, there is often a rather large amount of written material about it. The following short case description is based on interviews, extensive internally published material, articles and annual reports.

The case selection was rather difficult. The researcher was looking for the launch of a representative disruptive

innovation. There seemed, however, to be no typical case. In other words, it is typical of disruptive innovations that they are atypical, ie they arise from heterogeneous firms in different sectors. As Nayak and Ketteringham⁹⁵ wrote: 'They happen in many ways'. Domosedan® was selected in the end because it fulfilled all the criteria of a disruptive innovation, and because its development and marketing were extremely well documented inside the firm. The good access to interviewees further supported the selection.

Domosedan® is a sedative and pain-killer mainly used in equine veterinary practice, but also used for cattle and their related species in the wild. It was developed by the Finnish Farnos Group Ltd, which later merged with the Orion Group. The development of the drug began in the mid-1970s. It was launched in Finland in 1983 and after that it has expanded widely around the world.

Domosedan® is clearly an innovation; it is the first pharmaceutical preparation to have been developed in Finland from the molecule stage, and it has also become a commercial success. Furthermore, it can be defined as a disruptive innovation. First, it involved significant new technologies, ie it was developed from the molecule stage through basic research. Secondly, it represented a genuinely new approach to the treatment of large animals, and considerably changed the work of veterinarians because it enables large animals to be treated without being tied up or anaesthetised. Thus, it enables clinical and surgical examinations to be carried out when the animal (eg a horse) is standing still. This is much safer both for the animal and for the veterinarian. Furthermore, it allows treatment to be administered where the animal is, thus diminishing the need for transport. The

difference it made to the work of veterinarians is illustrated by comments such as: 'There was a time before Domosedan and there is a time after Domosedan.' Nowadays, it is a well-known product and used routinely in standing surgical and diagnostic procedures.

Market proactiveness when launching Domosedan®

The market creation for Domosedan® began long before the launch. The market was prepared through awareness building and education about the new drug. The firm systematically tried to target its market proactiveness first towards the opinion leaders, consisting of university professors and visionary practitioners. It seems that, together, these groups formed a group of innovative adopters, most university professors belonging to the innovators and most visionary practitioners belonging to the early adopters. Furthermore, it was considered particularly important to find and contact national opinion leaders in each country in which the product was to be launched.

The first contact with the innovative adopters was made by engaging them in the tests required for the sales permit. Whereas the university professors were engaged in the pre-clinical tests, the visionary practitioners participated in the clinical tests. Although these tests were conducted for scientific purposes, they also acted as a significant pre-marketing tool. They gave these people a chance to try the drug, which increased enthusiasm for and knowledge about the drug. The results of the tests were presented in scientific congresses well before the product was launched.

Awareness of the coming product was built up through veterinary congresses

and symposiums. Participation in scientific congresses aroused interest, led to inquiries and established contacts. Scientific congresses were also a good place to find more innovative adopters and to learn more about them. Organising scientific symposiums concentrating on a certain scientific theme has been a traditional marketing device among pharmaceutical companies. The benefits of the new drug are disclosed in the context of scientific discussion, even though the company itself stays in the background.

Since Domosedan® represented a scientific breakthrough it generated various dissertations and scientific publications both in Finland and abroad. These were also actively utilised in the marketing. They gave more scientific credence to the product and aroused interest among innovative adopters. The firm actively encouraged those who participated in its development to produce a dissertation related to the project.

Awareness of the coming drug was also built up through more traditional marketing means. Domosedan® was extensively presented in the firm's own newsletters, which were distributed to the practitioners (Finland) and distributors (abroad). Advertisements in trade papers were also used to raise awareness.

The education was very important because the drug was substantially different from the established ones. The proper dosage and use of the drug had to be taught to veterinarians step by step. Demonstrations were used to teach the innovative adopters who participated in the tests to use the drug properly. Detailed written instructions were also drawn up and distributed before the launch.

The launch of Domosedan® was a very special happening. In Finland, for

example, all practising veterinarians were invited to a big dinner party to celebrate it. This had never occurred before, and has not done so since. The other special feature was in the packaging of the drug. It looked more like perfume, with golden embossed designs. The message for the veterinarians was that this drug was something exceptional.

After the launch, some veterinarians required modifications to the product. They argued that the concentration of the drug was too strong. They had been used to giving large injections to large animals, and Domosedan® required a small dosage, which could be injected with a small syringe. Since these modification requirements were interpreted as stemming from unfamiliarity with the new kind of drug, they were not implemented, and the firm invested in education instead. Only minor post-launch modifications were made in the packaging and name, mostly due to the requirements of foreign countries.

Word-of-mouth communication was also utilised to reach the main market, and innovative adopters were often used as presenters on the occasions on which the product was introduced to other veterinarians. Furthermore, it was noticed that although people in the main market were not so interested in reading the scientific publications they still appreciated the fact that Domosedan® had been documented so thoroughly in a scientific forum.

Thus, it may be concluded that market proactiveness played an important role in the case of Domosedan®. Awareness building among innovative adopters was particularly emphasised in the market creation. These people were also actively engaged in raising awareness about Domosedan® in the main market, ie among the early and late majorities of innovation adopters.

Broader implications of the case study

There are three aspects inherent in the case that should be taken into account when the wider implications are considered. The case concerns the launch of a *disruptive innovation* in the *pharmaceutical field* and, since it deals with marketing to veterinarians, it also represents *business-to-business* marketing.

The case might open the eyes of other pharmaceutical firms to the advantages of more systematic utilisation of dissertations in the field of marketing. As the Domosedan® case showed, dissertations proved to be very useful in raising awareness and credibility. The use of pre-clinical tests and scientific symposiums has been common in the pharmaceutical industry, where it seems to work well in attracting innovative adopters. These methods may also be applicable in other contexts of disruptive innovations, where new technology needs further testing and where technology enthusiasts would eagerly participate in conferences to learn more about forthcoming innovations.

The case also demonstrated the value of delaying modifications to the innovation in response to every criticism before ascertaining whether the criticisms stem from real needs or old habits. In the latter case, education could be more useful than unnecessary modification.

What was interesting in this case was that personal sources of influence seemed to be more important at the early stages of innovation diffusion than previous studies indicate.^{96,97} Whether this was due mainly to the disruptiveness of the innovation or to the business-to-business marketing needs to be clarified in further studies. It seems, however, that firms that are developing disruptive innovations for business markets should consider more carefully how to benefit from opinion leaders in the early stages of innovation diffusion.

SUMMARY

Innovation launch has been widely researched, and lately there has been a growing stream of studies on disruptive innovations in particular. This paper seems, however, to be among the first to link market proactiveness with the launch of a disruptive innovation. This discussion on market proactiveness began by considering firm proactiveness as a pattern. It is presumed that this pattern would be useful for other researchers who need to focus either on the general level or on a certain dimension (eg proactiveness in processes).

Market proactiveness at the launch stage seems to be particularly important for highly innovative firms that are facing the challenge of shaping science into a commercially successful product. At this stage, it mainly takes the form of market preparation, ie building market awareness and educating prospective customers. The costs of market proactiveness become more justifiable if it can be targeted at innovative adopters. They could be innovators or early adopters, both requiring a slightly different approach.

Market proactiveness was illustrated through a case study, the launch of a disruptive pharmaceutical innovation, Domosedan®, in which it was extensively used. In particular, market awareness was actively built up before the launch. The case also showed that the same basic targeting actions (eg symposiums and congresses) could be used to arouse interest in both innovators and early adopters.

Since this paper was a preliminary conceptualisation of market proactiveness in launching disruptive innovations, more research is clearly needed to explore further how it could be created, targeted and exploited.

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