

Technology, market structure and intellectual property rights: Evidence from the pharmaceutical industry

Manuel Fernández-Bagüés
Universitat Pompeu Fabra, Barcelona, Spain
E-mail: fernanma@upf.es

This paper looks at the role of intellectual property rights in determining the relationship between market structure and R&D intensity. Empirical evidence has for a long time provided mixed results about this relationship. Sutton's work in "Technology and Market Structure" (1998) presented a seminal contribution in the field. His theory suggests that whether concentration is high in R&D intensive industries essentially depends on the substitutability of products associated with different technologies. If substitutability is high then an increase in the effectiveness of R&D increases the lower bound to concentration; otherwise concentration may stay low.

We argue that in those industries where knowledge can be securely transferable this relationship is not robust. Furthermore we present empirical evidence from the pharmaceutical industry that supports our hypothesis.

Keywords: Market structure, technology, intellectual property rights, outsourcing, pharmaceutical industry

Introduction

The empirical evidence has for a long time provided mixed results about the relationship between R&D intensity and the degree of concentration of an industry. This is not surprising if some non-observable factor is affecting this relationship. Furthermore, if the true relationship is given by a bound approach, standard regressions may be misleading. John Sutton's work (1998) represents a seminal contribution in the field. His "lower bound" approach eschews detailed and sensitive game-theoretic results, but generates a few key robust and testable predictions from the theory of strategic behaviour, which exclude pathological cases but include a wide range of industry structures compatible with minimal assumptions about the rational behaviour of member firms.

This bound approach suggests that whether concentration is high in an R&D intensive industry essentially depends on the substitutability of products associated with different technologies. If substitutability is high, then R&D intensive industries must show high concentration.¹ Through a cross sectional study, Sutton obtained

¹Because of the nature of the bound approach, if substitutability is low we cannot make any prediction

very robust results consistent with his theory [for some criticisms on Sutton's theory see Scherer (2000)].

Sutton's theoretical framework implicitly assumes that the different activities of the firm, such as research & development or marketing, can not be outsourced or cooperated. By relaxing this assumption² in Sutton's model, we show that the lower bound relationship between concentration and endogenous sunk cost is not robust. Consequently, our model predicts that a different relationship may be observed in those industries where property rights are strong, such that cooperating or outsourcing in R&D and marketing are possible.

For a series of manufacturing industries intensive in R&D, we show cross-industry evidence that supports our hypothesis. In those industries where property rights are strong, the lower bound relationship between concentration and R&D intensity is not robust.

By taking into account property right these results complement earlier cross-section econometric work on the relationship between market structure and concentration [Sutton (1991, 1998), Lyons and Mataves (1996), Robinson and Chiang (1996)].

While the results reported are consistent with our theory, it is natural to ask whether the patterns we find in the data might not perhaps be driven by some quite different mechanism than the one proposed. Little can be done to address this issue by means of further statistical analysis. A more helpful line of inquiry lies in asking whether there is any direct evidence for the operation of the mechanism that, according to our theory, drives this pattern in the data.

It is this idea that leads us to the examination of the pharmaceutical industry. By focusing in an individual industry we are able to better study how exogenous structural changes feed into the competitive process, and how this is affected by the possibility of cooperating or outsourcing. A second motivation for studying in detail this industry relates to the limitations of the Sutton's standard theory to explain its market structure.

Sutton pointed out the particular and fascinating characteristic of the competitive processes of the pharmaceutical industry, which although being highly intensive in R&D and marketing, still showed a relatively low concentration rate. He suggested that this peculiarity was due to the nature of pharmaceuticals R&D technology. In Sutton's original framework the R&D technology is represented by a series of different technologic trajectories, in which early innovators enjoy some advantage in introducing later products within the same family of products. This favours what he denominated the escalation mechanism, which, under certain circumstances, induced an increase in market concentration if a certain kind of exogenous shock (such as an increase in the R&D effectivity) disturbed the set of equilibrium configurations.

about the degree of concentration.

²Gruber (2000) studied a different variation of Sutton's theory by taking into account the role of product standards.

He argues that this is not the case in the pharmaceutical industry. Pharmaceutical firms focus on a wide range of technologies that moreover are weakly linked among them, both in the supply side and the demand side. Furthermore these technological paths do not constitute technological trajectories in its proper meaning. This is, early innovators along a certain technological path are not more likely to make the next successfully better product, or in other words, early innovators do not enjoy a significant first mover advantage. According to Sutton these characteristics of the R&D process made the payoff obtained by a firm that spent more than any of its rivals on R&D much lower, and therefore allowed concentration in the industry to remain low.³

In order to examine whether the pharmaceutical R&D paths, which Sutton identifies as the chemically related groups (CRG), could be interpreted R&D trajectories, Sutton studied the entries and exits in the group of the top 50 selling drugs for the years 1960, 1973 and 1986. Sutton finds that out of the 26 cases where there is a new bestseller drug in a chemical related group⁴ only in 7 of cases the innovative firm had already a top 50 drug in that (chemically related) group in the preceding reference year. This is, only in 7 out of 26 cases the new entries can be classified as a follow-on discovery where the pioneer firm seems to have some lead in discovering a chemically related drug.

Other authors have also paid attention to the relationship between market structure and R&D intensity in the pharmaceutical industry. Particularly Mataves (1999) boards the topic and tests whether the industry changes in the late 80s and the early 90s were consistent with Sutton's predictions. Using aggregated concentration data, she finds that although the industry is becoming more consolidated, the leading firms still have a very little share of the market. Following Sutton's line, she argues that the cause of the industry's relative little fragmentation is in the nature of its R&D technology, which induces a proliferation mechanism rather than an escalation mechanism.

In contradiction with these previous studies [Mataves (1999), Sutton (1998)], we offer new evidence that points out that this description of the RAD process in the pharmaceutical industry is not valid anymore. Looking at the worldwide bestseller drugs in 1999 and comparing them to the 1986 top 50 bestseller drugs, we find that in those CRG where there is a change in the sales leadership, 8 out of 10 cases are follow-on discoveries by the pioneer firm.

In fact, this is not surprising given the dramatic changes, both qualitatively and quantitatively, that the pharmaceutical R&D technology went through in the 80s

³Still, he explains, two key features of the industry put smaller firms at a disadvantage. The first relates to the marketing side, where in order to exploit discoveries, a minimum scale of effort is needed. The second relates to the portfolio effect which makes small and medium-sized research-oriented companies vulnerable to takeover.

⁴Sutton only looks at entries for those groups where there was already a drug among the top 50 bestsellers.

and in the 90s. In qualitative terms, it switched from a chemical to a biological basis. The chemical approach hinged upon scale: discovery of new compounds stemmed from systematic assays of many molecules in laboratory and clinical tests to find a few promising candidates. The biological approach hinges upon rational understanding of the function of the human body and the action of drugs. Researchers can make more informed choices about the entities to be tested. While scale is still important for testing molecules and for clinical trials, drug research now requires solid understanding of molecular actions and pathologies. Therefore, according to Sutton's standard model, this technology change should have produced a great increase in concentration.

But on the other hand, all these changes also made it much easier to specify and communicate technological know-how. Patents have been always very important in the pharmaceutical industry. But further on, the rise of polymer chemistry, advances in chemical engineering and the advent of recombinant DNA technology have made it much easier to specify and communicate technological know-how in this industry than it used to be, or currently is in a number of other industries. Pharmaceutical patents can be made very strong. Moreover, since a slight change in the underlying gene sequence of a protein can result in very different functions, it is very difficult, for example, to invent around a patent on a drug. It is also possible to patent particular molecules, building blocks for innovations (such as enzymes, proteins, and hormones), and any delivery system.

Sutton had suggested that in response to an exogenous shock that raised the returns to innovation, an escalation process would follow on in which firms financed their increase in R&D expenditure through internal growth or through a process of mergers and acquisitions. However his model does not consider that whenever property rights are strong enough, firms may also obtain technology (or other assets) through joint ventures, alliances, co-marketing agreements or licensing.

To study the relationship between firms' growth and strategic alliances we use data on joint ventures and alliances from the Strategic Alliance database of the Securities Data Corporation (SDC), and data on m&a from the Mergers & Acquisitions SDC database. The sample universe for our analysis is all m&a and jv&a in the pharmaceutical industry worldwide between 1990 and 1997. SDC obtains information from publicly available sources, including SEC filing, trade publications and international counterparts, and news and wire sources. The data clearly do not track all the deals consummated over the period, due to inadequate corporate reporting requirements. However, since this database is probably the most comprehensive database on such deals, it is ideal for empirical analysis. On the other hand, for the firm financial data we use Standard & Poor's Compustat database and firms' annual reports.

By studying the joint ventures and alliances activities together with the mergers and acquisitions, our study complements previous empirical studies on acquisition activity in high technology industries and its relationship to the R&D process [Granstrand and Sjölander (1990), Hall (1990), Blonigen and Taylor (2000)] or on the relationship between joint venture activity and R&D [Friedman et al. (1979)].

Our empirical results suggest that the greater the involvement of firms in joint ventures and alliances activities, the lower their use of mergers and acquisitions in order to acquire innovation or technology, and therefore the lower the increase in market concentration.

Competition and regulation in the pharmaceutical industry: An experimental analysis of the impact of regulation on competition between generic and branded drugs

Laura Ferrari Bravo^a and Luigi Luini^b

^a*University of Roma, Italy*

E-mail: lfbravo@ats.it

^b*University of Siena, Italy*

E-mail: Luini@unisi.it

Abstract

Much of the public debate about pharmaceuticals over the past years has focused on prices. From a market intervention perspective, this has led to the proliferation of a great variety of government regulations,⁵ all of which aim at facing the conflicting policy targets of granting drug fruition to all citizens and containing/controlling public health expenditure.

However, policies designed to improve the efficiency of the pharmaceutical market have to take account of its features in terms of industry characteristics and rigidity of demand. Indeed, in the pharmaceutical market regulatory, contractual and financial mechanisms influence price formation and the information flow, while determining – at the same time – different relationships between economic agents along the chain consumer-decision-maker-payer. The paper aims at comparing within an experimental framework the impact of different government regulatory intervention over competition between generic and branded drugs.

⁵E.g. price control systems, profit caps, fixed price margins etc. For a review of regulations in the pharmaceutical industry see Jacobzone (2000).

Product piracy: The sale of counterfeit pharmaceuticals in developing countries

Kristina M. Lybecker

Department of Economics & International Business, Drexel University, 3141 Chestnut Street, Philadelphia, Pennsylvania 19104, USA

Abstract

Developing countries are awash in counterfeit pharmaceuticals and despite historically unprecedented protection for intellectual property rights, the problem is getting worse. The current ease of counterfeiting is unparalleled and enforcement officials describe pharmaceutical counterfeiting to be "... as lucrative as pushing heroin, ... about as hard as photocopying, ... (and) low on law enforcement's agenda".

Why are counterfeit pharmaceuticals more prevalent, when patent protection for ethical drugs is stronger than ever before? This paper presents an explanation by modelling a local pharmacist who responds to the intellectual property rights (IPR) regime governing the market for pharmaceuticals. The analysis explores the impact of the policy environment on the welfare of the consumer, the price of pharmaceuticals, and the composition of the market, and illustrates the importance of coordinating increases in both intellectual property rights and local enforcement. The model predicts that stronger intellectual property protection without increased enforcement (a common pattern in developing countries) will result in the elimination of the domestic generic industry (a producer of efficacious drugs) but will fail to root out the counterfeiters. The elimination of a secondary source for pharmaceuticals reduces competition and increases prices and profits, enhancing the temptations of counterfeiting.

Pharmaceutical counterfeiting is a problem that reaches beyond patent and trademark infringement to threaten both human lives and industry profits. Health concerns obviously motivate the discussion of counterfeit drugs. The consequences of the availability of spurious products in the market for pharmaceuticals can be death,⁶ prolonged illness, a loss of confidence in the system of western medicine and drug resistant viruses. At the same time, companies risk losing sales and profits when consumers purchase infringing and counterfeit products. These firms also face the harmful reputational effects of counterfeit products.

⁶Medical experts have a difficult time agreeing "... on how many deaths are caused by fake drugs, although most acknowledge that World Health Organization statistics showing more than 500 fatalities caused by contaminated cough syrup over the past 15 years only scratch the surface of the problem" (Hajari 1998, p. 265).

At the national level, counterfeit drugs are only one aspect of the larger problem of intellectual property (IP) rights infringement. Given that intellectual property comprises a growing percentage of world output, IP protection has become an important element of international trade agreements, and many trade issues are linked to such protection. As a result, the problem of counterfeit drugs is primarily approached on the international stage, through multilateral trade negotiations. Facing the threat of trade sanctions, many developing countries adopt legislation guaranteeing stronger intellectual property laws. However, these countries often lack the resources or incentives to enforce the newly passed legislation. The result is an increase in IP protection without effective enforcement, a combination that may exacerbate, rather than solve, existing problems. Infringing generic pharmaceuticals are eliminated following the passage of strong IP legislation, but the production of counterfeit drugs increases without heightened enforcement.

This piece contributes to the body of work on intellectual property rights, as well as the sparse economic literature on counterfeiting. The existing literature on intellectual property protection has primarily focused upon the welfare consequences of increasing IP protection, examining the *ex ante* and *ex post* situations, and describing the potential effects of the introduction of patent protection for pharmaceuticals. While they may accurately describe the eventual outcomes, these papers fail to consider the process of transition, the gradual steps that nations must take to arrive at a regime of strong intellectual property rights protection. This work seeks to fill that gap, analysing an interim equilibrium by detailing the gradual process of conversion and the associated welfare effects.

This paper also contributes to the literature on counterfeit products. The two primary works in this area cover deceptive and non-deceptive counterfeiting. Grossman and Shapiro (1988b) analyse the positive and normative effects of non-deceptive counterfeiting, examining markets for status goods. Alternatively, Grossman and Shapiro (1988a) model a market in which domestic firms, which own trademarks and develop reputations for high-quality products, compete with foreign firms, which export legitimate low-quality goods and counterfeit copies of high-quality domestic products. These articles provide a complete treatment of the positive and normative effects of both deceptive and non-deceptive counterfeiting.

They do not, however, examine the changes that take place in the market for counterfeits as a country moves from a regime of weak intellectual property rights, to one of strong intellectual property rights protection. The interim equilibrium is considered here, examining the forces at work in the market for counterfeits, and the changes that occur in the market for pharmaceuticals as a developing nation adopts a strong IP regime.

The analysis begins with a familiar vertical differentiation model of two firms selling differentiated goods to consumers with differing tastes, and then introduces asymmetric information. The local pharmacist, the economic decision maker, carries either brand-name or generic drugs. Brand-name pharmacists possess private information about the quality mix of their drugs, carrying real drugs, produced

by international pharmaceutical firms, worthless counterfeits, or some combination thereof. Consumers are sensitive to the brandedness of the pharmaceuticals they purchase, as well as price.

The model examines the quality mix and pricing decisions of pharmacists in response to changes in intellectual property legislation and enforcement on the sale of counterfeit drugs. Initially, the representative developing country lacks any protection for intellectual property rights and the market is composed of real drugs, worthless counterfeits and generic copies. With the signing of an international trade agreement, the developing country begins providing strong protection for intellectual property rights. The strengthened commitment to intellectual property rights makes it impossible for government officials to ignore the established domestic firms that have historically produced generic copies of on-patent pharmaceuticals. These firms and the generic copies disappear. The branded pharmacist, now a local monopolist, continues to sell both real and counterfeit drugs. Without a concurrent improvement in enforcement, counterfeiting worsens.

The tension between industrialized and developing countries escalates when the issue of intellectual property rights is raised. Positions are passionately defended when the subject of pharmaceutical patents arises. Masquerading as curative medicines, counterfeit pharmaceuticals are increasingly prevalent. At a time of unprecedented global IP protection, this prevalence is alarming and puzzling. This work examines the problems associated with increasing intellectual property rights in developing countries, focusing on the transition to effective levels of enforcement. The results indicate that the institution of stronger IP protection removes efficacious generics from the market, increasing profits and the temptations of counterfeiting. Without a concurrent commitment to enforcement, stronger IP protection can do more harm than good.

References

- [1] G.M. Grossman and C. Shapiro, Counterfeit-Product Trade, *American Economic Review* **78**(1) (March 1988), 59–75.
- [2] G.M. Grossman and C. Shapiro, Foreign Counterfeiting of Status Goods, *Quarterly Journal of Economics* **103**(1) (February 1988), 79–100.
- [3] N. Hajari, Swallowing Bitter Pills, *TIME* **151**(30) (26 January 1998), 261–270.
- [4] D. Stipp, Farewell, my logo, *Fortune* **133**(10) (27 May 1996), 128–138.

Demand for pharmaceuticals under co-payment schemes: Evidence from Catalonia

Joan Costa^{a,b}, Joan Rovira^b and Panos Kanavos^a

^aLSE Health, London School of Economics, London, UK

^bGrup de Recerca en Economia de la Politico Social, Barcelona, Catalonia, Spain

Objective: This paper estimates the demand for pharmaceuticals under different co-payment schemes. Currently in Spain pharmaceuticals have been reimbursed when consumed under doctor prescription at a 40% and 10% co-payment rate. This paper accounts for the role of co-payment rates in the consumption of pharmaceuticals in order to estimate the aggregate demand for pharmaceuticals in Catalonia using the 1994 Catalan Health survey. We describe the decision making scheme that leads to the pharmaceutical demand and consumption.

Methodology: We use statistical and microeconomic models to test the sensibility of the demand for drugs to characteristics influencing demand for health care. In particular we consider age, health care utilisation, the influence of chronic and acute diseases, and finally regional and price variations.

Policy goals:

Expected results: The demand for pharmaceuticals is highly sensible to acute diseases. There is evidence of regional and medical practice influence in acute diseases as well. Age is the major explanatory variable such as individual income. Health surveys show extreme limitations as they do not sufficiently account for heterogeneity in pharmaceutical products, results may shed additional evidence if cross-country comparisons were undertaken.

A competing edge for the pharmaceutical industry: Propagating agile processes throughout the supply chain

N. Shaw and T. Burgess

Leeds University Business School, Maurice Keyworth Building, Leeds University, Leeds, LS2 9JT

The pharmaceutical industry is undergoing substantial change and is experiencing a variety of new market factors. New technologies, global economies, emerging markets and the nature of drug development all provide simultaneous threats and opportunities [1,2]. Specific developments in biotechnology and genomics, and the uncertainty surrounding the size and scope of those markets increase the future complexity of this industry. The UK pharmaceutical industry presents interesting challenges for both manufacturers and researchers.

This paper draws upon UK government papers on the industry and the findings and methodologies generated from a three-year, multi-disciplinary research project called BRITEST (<http://www.britest.co.uk/HomePage.asp>), value £1.3M, which focussed upon improving new product and manufacturing process development. The aims were to reduce the time to market, levels of capital expenditure in new projects and overall asset responsiveness. The link with value chain performance is discussed in this paper and issues for future research set out.

References

- [1] Keynote Hybrid Report on Prescribed Pharmaceuticals, <http://hybrid.keynote.co.uk/keynotecd/HOME/dcrypt0.htm> to <http://hybrid.keynote.co.uk/keynotecd/HOME/dcrypt9.htm>, 2000.
- [2] S. Howitt, *The Chemical Industry Keynote Report: 2000 Market Report*, ISBN 1-84168-036-2, 2000.

The dynamics of global and local: Organisational dilemmas and struggles in a pharmaceutical company

Stefan Sveningsson

Department of Business Administration, Lund University, Box 7080, SE 220 07 Lund, Sweden
E-mail: Stefan.Sveningsson@fek.lu.se

Introduction

The empirical investigations of globalisation in organizations are often cast in general forms, focusing on some overall logic behind and effects of presumed global organizational forms and models. Much has been written about ‘global webs’, ‘the borderless organization’, ‘the new organizations’ and ‘the lean networking organization’ (Parker, 1999; Prud’homme van Reine, 1996). Part of the research has focused on the advantages of globalisation in order to sustain efficiency on account of the possibility to create ‘lean’ and ‘efficient’ organizations in which strategic resource allocation is made at central and thus global organizational levels. Another part of the research has focused upon the need to complement global strategies and universal organizational models with local initiatives and creativity, hence the talk of combining global and local into what is sometimes referred to as ‘glocal’. All this research has been important since it has broadened the mainly conceptual understanding of globalism in organizations as well as the potential advantages and presumed problems of such efforts.

However, despite many contributions on a conceptual level, there are relatively few empirical studies addressing specific globalisation processes in organizations on a micro level. Consequently, our understanding of specific processes and situations of globalisation, its presumed advantages and problems, in, between, and around organizations is still somewhat poor. As some authors have pointed out, there is a lack of in-depth studies of specific acts, events and processes in organization studies in general. (Prud’homme van Reine, 1996). Analyses of globalisation in organizations is often caught in the traps of reification, and in mixing process and process outcomes in strategic and organizational analysis. Concepts such as ‘global’, ‘local’,

'glocal', 'global strategies' are treated as things or thing-like phenomena. In opposition to this dominating approach, the approach used here focuses on the specifics of globalisation in organizations, described in some detail. I attempt to contribute to a situational understanding of organizational phenomena, being more 'close' to empirical phenomena in organizations (everyday practice), focusing specific instances of globalisation and struggles within the global-local dynamics in an organizational context.

This is done through an investigation of globalisations practices in a pharmaceutical company, Pharma Inc. A pharmaceutical corporation constitute an especially interesting arena for investigations into and analyses of globalisation practices. This because of the emphasis regularly put on creativity and innovation in such corporations, an emphasis that partly challenges some of the main ideas in the global discourse. The tensions and challenges that emerge from the establishing of the global discourse thus presents managers and personnel at all levels in such organizations with fundamental dilemmas concerning the very future of the corporations.

The study

Pharma Inc., is a large research-intensive pharmaceutical corporation and the result of a merger between two corporations, of American and Swedish origin respectively. The empirical study here presented was largely conducted at a former subsidiary in the Swedish corporation. This company was founded in the forties and became international mainly during the seventies. The internationalisation was organized predominantly through the establishing of local independent subsidiaries in commercially viable markets, an organization that proved to be very successful. The corporation developed substantially during the eighties and became a world player in a few markets. However, in the middle of the nineties some of its products matured and corporate management searched for a merger candidate. The corporation subsequently merged with another pharmaceutical in the end of the nineties and Pharma was hence created.

Pharma Inc. is today quite traditionally horizontally differentiated into several global functions of which R&D is the largest in terms of both money and people. The R&D function is in its turn organized into local research cells scattered world wide and a variety of global sub-functions that are dispersed across the local cells, the consequence being that for every sub-function within R&D there is a global as well as local level. Since the merger the formerly local companies have been transformed from being independent subsidiaries to becoming substantially less independent local research cells.

Turning global

In the merger the concept of global was raised as a key topic by the upper echelons of management. While both the companies that entered the merger previously

had been considered as being international the new corporation that emerged was to be seen as global. Since the merger, the corporation, the industry and the market has been reconceptualized in terms of global. In public statements the company is described as being “a corporation of impressive size and global scope” operating on a “global high-tech market” and the new organization as a “global restructuring of the pharmaceutical operations”. Although global might refer to many things, “harmonization” among local cells (the former independent subsidiaries) is what most managers refer to, implying that drug development in some respects can be organized similar independent of local circumstances. To accomplish this corporate management have issued standardized operating models to be implemented throughout the corporation. This effort was also accompanied by efforts of centralization in decision-making areas where the former independent subsidiaries had a large scope of action, i.e. some investments, recruitments and project priorities. The logic behind this kind of globalisation concerns about allocating resources between local cells more efficiently by reducing overlapping activities within functions and/or projects. A global and homogenous organization is also supposedly more flexible when it comes to allocating resources because of easy comparisons among cells. Many of the decisions concerning larger investments have thus been centralized away from the local level, where the local cell manager now has minor coordinating tasks. The local functional managers are now responsible to the global heads rather than to the head of the cell. Both the implementation of the standardized operating models and the centralization efforts are putting a lot of pressure at the local level to exhibit both compliance to the corporate administrative demands and local creative initiatives in order to deliver commercially viable products.

These organizational practices are based on notions of global as “world wide homogenisation” (Levitt, 1983) and the talk of “global strategies” (Bartlett and Ghosal, 1989; Hastings, 1993). Prud’homme van Reine (1996) claims that the organization most referred to in this respect is the Swedish -Swiss merger Asea Brown Boveri. Wiseman (in Prud’homme van Reine, 1996:93) characterizes ABB “as a lean firm that employs communication effectively in thinking globally and acting locally”. Pharma Inc. are using the same concepts in order to reduce tensions and this has resulted in talk of “glocalism”, as one manager explained: “There’s really no conflict between the global and local level, we combine them into what we describe as glocalism.”

Local intricacies

However, the enthusiastic comments by global managers, usually referred to in a likewise enthusiastic business press, are rare at the local level. Local managers more often raise the problems of having global managers rarely present as one researcher expresses:

“But in the old company (before the merger) I felt like: It was me, I had my department manager, I had my R&D manager and then I had the manager of the company. You met him sometimes. It wasn’t that many steps. Since this new organization has come . . . its like the company manager is sitting on the moon.”

The extensive travelling by many managers as a result of scattering research facilities all over the world, have subsequently led to presumed problems of coordination of cell managers raising questions about the necessity of travelling as such. Several managers have raised the problems of having “global functions that are building their own castles irrespective of each other”. The global discourse thus seems to lay a ground for fragmentation tendencies at the local level, hence raising further coordination demands on local cell managers. In sum then, the talk of global and the organizational changes following that seem to have created tendencies of both a higher degree of hierarchization and fragmentation between functions at the local level.

The development has, both at the local and global level raised questions about whether the globalisation practice hinders the possibility of delivering drugs on a creative and innovative basis. Parallel to the globalisation process there’s a widespread belief in Pharma Inc. that effective drug development is partly based on creativity, small scale teams and mavericks working under principles of self governing rather than any universal principles of standardized and global operating models- In these situations, neither the mantra ‘think global – act local’ nor the more mundane operating models, issued from global levels, has been adopted and thereby become useful at the local level. Efforts of global managers to reduce tensions have proved difficult and the globalisation process has to some extent lost its momentum.

Purpose of the paper

Research on globalisation in organizations is meagre. To the extent that globalisation in practice, in spite of some conceptual claims, is followed by not only advantages of resource allocation but also extensive standardization and hierarchization, it obviously creates tensions and struggles at the local level. These tension and struggles concerns about what is considered to be of central importance in the pharmaceutical industry, namely creativity and innovation. Emerging out of this are organizational and managerial dilemmas that bears upon the long-term survival of the corporation. The paper takes seriously the advantages of globalism in the pharmaceutical industry, but also raises the need to investigate further the dilemmas of modern organizational notions of what constitute effective drug development. The paper does not purport to be normative in the sense of advising how to organise effective drug development. The purpose it to exhibits the inherent ambiguity, contradictions and dilemmas in advancing talk of global in pharmaceutical companies. Unless empirically rich and detailed studies of globalisation in organisations are done, much of what is said about it at an organizational level remains vague and mysterious for those targeted by it.