

INNOVATION IN EU MERGER CONTROL: WALKING THE TALK

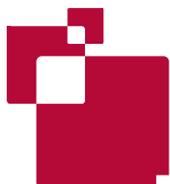
REINHILDE VEUGELERS

Highlights

- European Union policymakers have in principle put innovation at the heart of competitiveness, in particular in the Europe 2020 strategy. But in merger control, assessments of the innovation effects of mergers are inadequate, even though mergers and acquisitions can have a significant impact on the development of the structure of an industry, and on its capability to innovate.
- EU merger control rules include scope for assessing the innovation effects of mergers, but in practice, the European Commission's directorate-general for competition (DG COMP) is not 'walking the talk'. Innovation effects are only assessed when claimed by parties to a merger, and this happens rarely. Where innovation effects have been claimed, they have not been decisive in any case, meaning DG COMP has not considered them important enough to influence its decision.
- A framework should be put in place that makes the reporting of efficiency-related information by the merging parties mandatory, so that innovation effects can be properly assessed for all mergers. In addition, models can be used to make an assessment of the longer-term innovation effects of a merger, and to help inform decision-making.

Telephone
+32 2 227 4210
info@bruegel.org

www.bruegel.org



Reinhilde Veugelers (reinhilde.veugelers@bruegel.org) is a Senior Fellow at Bruegel. The author acknowledges the excellent research assistance of Joan de Solà-Morales and Hendrik Meder, and would like to thank Lars-Hendrik Röller for discussing and commenting on earlier versions of the paper.

INNOVATION IN EU MERGER CONTROL: WALKING THE TALK

REINHILDE VEUGELERS, FEBRUARY 2012

1. See http://ec.europa.eu/europe2020/index_en.htm.

2. *'In markets where innovation is an important competitive force, a merger may increase the firms' ability and incentive to bring new innovations to the market and, thereby, the competitive pressure on rivals to innovate in that market. Alternatively, effective competition may be significantly impeded by a merger between two important innovators'* (ECMG paragraph 38).

3. *'In order to determine the impact of a concentration on competition in the common market, it is appropriate to take account of any substantiated and likely efficiencies put forward by the undertakings concerned. It is possible that the efficiencies brought about by the concentration counteract the effects on competition, and in particular the potential harm to consumers, that it might otherwise have and that, as a consequence, the concentration would not significantly impede effective competition'* (ECMG paragraph 29).

4. ECMG (paragraph 78).

5. For a more detailed definition and classification, see Neven and Seabright (2003).

6. This may apply to other areas within the competition policy portfolio, but our emphasis here is exclusively on merger control.

7. For instance, see the ECMR (paragraph 29) and the ECMG (paragraph 87).

1 INNOVATION EFFECTS IN EU MERGER CONTROL: THE PRINCIPLES

Innovation is becoming more central for competitiveness, both for countries and companies. In many markets, the ability of companies to compete is fundamentally driven by their ability to innovate successfully, while policymakers are increasingly focused on innovation as a basis for growth. The European Union's Europe 2020 strategy, for example, has innovation at its heart¹.

Mergers and acquisitions can have a significant impact on the development of the structure of an industry, and on its capability to innovate. The European Commission and its directorate-general for competition (DG COMP), acknowledges this in theory, at least since the publication of its 2004 guidelines on the assessment of horizontal mergers² (ECMG). These highlight the appropriateness of taking efficiencies into account in order to better determine the effects of a merger on competition, and point to the possibility of efficiencies to counteract the harm that a merger could otherwise cause³. In order to accept and take efficiencies into account, the European Commission specifically requires efficiencies to (a) benefit consumers, (b) be merger-specific, and (c) be verifiable⁴.

In merger cases, efficiencies are typically classified into two groups: **static efficiencies**, which relate to variable and marginal costs reductions; and **dynamic efficiencies**, which can involve fixed cost savings or higher investments. Although innovation could relate to reductions of variable and marginal costs, it is typically considered to fall into the dynamic efficiencies category⁵.

In this Policy Contribution, we look beyond the principles to observe how DG COMP has concretely

taken into account innovation effects in merger control⁶. The evidence suggests that, despite the European Commission highlighting innovation as the key to growth, DG COMP is not 'walking the talk'. Few cases have been claimed and examined for their innovation effects. And when examined, innovation effects have not turned out to be decisive for competition assessments, with verifiability being a major constraint for DG COMP, preventing it from fully incorporating innovation effects in its analyses. In order to improve on the treatment of innovation effects in merger cases, we show how an *ex-ante* framework for predicting innovation effects can be designed, based on insights from the economics and management literature.

2 INNOVATION EFFECTS IN MERGER CONTROL: THE PRACTICE

The 'new' (or 'revised') Merger Regulation (ECMR: Regulation (EC) No 139/2004), finalised in 2004, created the first formal EU framework for an 'efficiency defence', allowing for the possibility that the merger would involve significant efficiency gains that could counteract the adverse impact on competition. The ECMR does not exclude the possibility that the Commission can itself take efficiency effects into account as part of its substantive analysis of the consequences of the merger, even if the parties have not submitted them. However, an analysis of the implementation of the ECMR shows that the Commission has made little use of this option. Case law shows that the burden of proof when it comes to efficiency effects rests with the parties to the merger⁷. DG COMP only attempts to assess efficiency effects in a systematic manner when they are alleged by the notifying parties in those merger cases that pass through Phase II investigation, ie those notified cases where the Commission has raised serious doubts in Phase I, leading to a definite possibility of a negative decision.

In order to assess how DG COMP has tackled these claimed efficiencies in practice, we looked at all Phase II cases under the new ECMR (2004-11)⁸. As only a small proportion of cases go into Phase II (about five percent), the analysis can only rely on 42 cases⁹. Table 1 shows the results. There were no negative decisions.

Of the 42 Phase II cases, efficiency claims were put forward in 11 cases. In nine cases, both static and dynamic efficiencies were claimed; in two cases, only dynamic efficiencies were claimed. This means that in only 26 percent of the cases did parties to the merger claim efficiencies. Interestingly, out of the 42 cases, there were at least two in which the Commission suggested that it would very likely have accepted efficiency claims, but it did not verify them because the parties did not claim and substantiate them. This shows (a) the aforementioned placing of the burden of proof on the notifying parties, and (b) the trade-off that DG COMP constantly faces between its willingness (and ability) to identify and introduce efficiency considerations in its analysis, and the fear of taking on the burden of proof and causing a significant loss of legal certainty.

Of the 11 claimed cases, efficiency claims were accepted in only two. Both static and dynamic efficiency claims have a low acceptance rate, but dynamic efficiencies in particular have a very low probability of acceptance. There seem to be no major differences in how decisive the various conditions for acceptance were (verifiability, merger-specificity, and consumer benefit).

Even in the unlikely event of claimed efficiencies being accepted, the claimed and accepted efficiencies, whether static or dynamic, have never proved to be decisive in case decisions, ie have never changed a case decision.

It is worth noting that the two cases that were accepted are both related to non-horizontal activities. The European Commission specifically highlights that, unlike horizontal integration, vertical

Table 1: Efficiency claims in EU Phase II merger decisions (2004-11)

Out of 42 cases	Static efficiency claims	Dynamic efficiency claims
Alleged	9	11
Verifiable	3	3
Merger specific	3	4
Consumer benefit	3	4
Accepted	2	1
Decisive	0	0

Source: On the basis of <http://ec.europa.eu/competition/mergers/cases/> (DG COMP).

and conglomerate mergers provide substantial scope for efficiencies¹⁰. This suggests that the Commission is more likely to accept efficiencies brought about by non-horizontal mergers. Although it is more difficult in horizontal mergers to have efficiency claims accepted, it is not *per se* excluded. All three conditions have each been met at least once since 2004.

The most worrying finding is undoubtedly that efficiency claims have been decisive in none of the Phase II cases. This means that DG COMP has not considered them important enough to influence its decision. DG COMP, in its case decisions, has clearly stated that the same conclusion would have been reached anyway.

In addition, DG COMP's assessment of efficiencies lacks clarity. Whether or not a hypothetical efficiency meets a particular condition (namely verifiability, merger specificity, and consumer benefit) is often defined only vaguely. One has to read between the lines to assess DG COMP's position. Also DG COMP's final conclusions on the examined efficiencies are not clearly stated and are somehow left open.

As our attention is particularly focused on innovation effects, we analysed the 42 Phase II cases in more detail in this regard. The European Commission specifically recognises the possibility for mergers to lead to innovation-related efficiencies¹¹. Table 2 on the next page reports the results:

8. For a similar analysis of static and dynamic efficiency claims for cases from 2004-09, see Röllner (2010).

9. As of June 1, 2011, out of a total of 58 cases (including 21 Art. 8(1), 23 Art. 8(2), 2 Art. 8(3), and 12 aborted or withdrawn cases), 43 decisions had been published. In one case, the European Commission indicated that the parties had put forward an efficiency defence, but did not provide any details. Although we know that efficiencies were alleged and not decisive, we do not know about the other variables, thus the case has not been included in the analysis.

10. In its non-horizontal merger guidelines (2008/C 265/07, paragraphs 11 and 13), the Commission states that '*non-horizontal mergers are generally less likely than horizontal mergers to significantly impede effective competition*', and '*vertical and conglomerate mergers provide substantial scope for efficiencies. A characteristic of vertical mergers and certain conglomerate mergers is that the activities and/or the products of the companies involved are complementary to each other. The integration of complementary activities or products within a single firm may produce significant efficiencies and be pro-competitive*'.

11. For instance, see ECMG, paragraph 81.

'Most worrying is that innovation efficiency claims have not been decisive in any cases. DG COMP has not considered them important enough to influence its decision. DG COMP, in its case decisions, has clearly stated that the same conclusion would have been reached anyway.'

only four out of the 42 cases claimed innovation effects. Only one innovation claim was accepted, but did not influence the decision. With so few data points, one cannot draw any firm conclusions. Nevertheless, some interesting observations can be made. The verifiability condition seems to be the most difficult to meet. This is consistent with case law and the horizontal merger guidelines, all suggesting that efficiencies are much more likely to be considered when their effect on consumer welfare (via their direct effect on prices) is more immediate and verifiable. This is unfortunate for innovation impact assessments of mergers because innovation effects are typically uncertain and become clear only over the medium to long-term.

That the Commission accepted the existence of innovation-related efficiencies in one case indicates that DG COMP has not strictly ruled out innovation-related efficiencies. Nevertheless, the case evidence from the implementation of the ECMG shows that innovation-related efficiencies do not receive the treatment that they should or could be receiving.

Table 2: Innovation-related efficiency claims in EU Phase II merger decisions (2004 to present)

Out of 42 cases	Innovation-related efficiency claims
Alleged	4
Verifiable	1
Merger specific	2
Consumer benefit	3
Accepted	1
Decisive	0

Source: <http://ec.europa.eu/competition/mergers/cases/> (DG COMP).

3 PROBLEMS FOR THE ANALYSIS OF INNOVATION EFFECTS IN MERGER CONTROL

There are two related problems with the current implementation of efficiency effects in the ECMG. The first is the low rate of cases *claiming* innovation-related efficiencies, which is *in casu* a necessary condition for innovation-related efficiencies to be examined by DG COMP.

One reason for the low rate of cases claiming innovation-related efficiencies could be that the Phase

BOX 1: THE ROLE OF INNOVATION EFFECTS IN EU MERGER CASES

Cases with innovation-related efficiencies alleged and accepted:

- Metso/Aker Kvaerner (Paper): dynamic efficiencies (development of better and more environmentally-friendly products) were, although not clearly stated, deemed verifiable and merger specific, to the benefit of consumers, but were not case-decisive.

Cases with innovation-related efficiencies alleged, but not accepted:

- Nokia/NAVTEQ (telecoms): vertical acquisition of a navigable digital-map database provider by a mobile telephone producer. Static efficiencies were accepted (elimination of double mark-ups), but dynamic efficiencies (faster and better development of map functionalities) were deemed not verifiable or merger specific.
- TomTom/Tele Atlas (software): vertical acquisition of a navigable digital-map provider by a portable navigation devices producer. The claimed static efficiencies were accepted (elimination of double mark-ups), but the dynamic efficiencies (the development of better and faster maps) were not as they were deemed not verifiable.
- T-Mobile Austria/Telering (telecoms): mobile phone operators. Dynamic efficiencies (better capacity utilisation) claimed, consumer benefit not accepted.

Some cases involving innovation-intensive sectors or innovation-active firms not claiming efficiencies:

Oracle/Sun Microsystems (computer programming); IBM/Telelogic (ICT services); Google/DoubleClick (internet); Thomson/Reuters (ICT services); Thales/Finmeccanica/AlcatelAlena/Telespazio (aerospace); JCI/VB/FIAMM (electric components); Johnson&Johnson/Gundant (medical instruments); Siemens/VATech (electric equipment); Blackstone/Acetex (chemicals).

II mergers simply did not offer any innovation efficiencies, and therefore the parties did not raise the issue. That, however, seems highly unlikely. When we look at the sectors and the companies involved, there are several Phase II cases in which innovation effects can be presumed to be present. A case can be defined as innovation-sensitive, when either (i) it is in a medium or high-tech sector (ie a sector with an above-average research and development intensity), and/or (ii) the parties to the merger are significant innovators¹². Using these criteria, we find that 28 out of the 42 Phase II cases can be classified as innovation intensive, including the four cases that claimed innovation effects (see Box 1 for examples)¹³.

Perhaps the merging parties in the innovation-sensitive cases did not claim any innovation-related efficiencies because the innovation effects were more likely to affect the innovative incentives and capabilities in the industry negatively rather than positively. If that were the case, the fact that DG COMP is not assessing innovation effects if they are not claimed by the merging parties is problematic, because it would preclude an assessment of negative innovation effects, potentially harming consumers.

Another likely motivation for merging parties not to claim innovation-related (or any) efficiencies, even if they exist, is, as Röller (2010) suggests, one of 'informational efficiency offence'. The current legal framework establishes that not claiming efficiencies will not lead to any negative presumption¹⁴. Claiming them might be considered a sign of a 'weak' case: if they are emphasised, it is because there is a negative effect to counteract. Thus, there is an incentive for the parties to a merger not to claim innovation-related efficiencies, which in reality means that the effects of the merger on innovation will not be duly assessed, as DG COMP currently does not assess effects that are not claimed.

The second problem is the low probability of acceptance and the lack of influence of

innovation-related effects. Innovation – either incremental or disruptive – has obvious effects¹⁵, either by introducing new or better products and varieties, and/or through reduced production costs. The Commission is well aware that innovation effects can be very important for consumers, which is shown by Table 2: the 'consumer benefit' condition was accepted in three out of the four innovation-claiming cases.

Nevertheless, the consumer-surplus effects from merger-induced innovation effects are difficult to verify immediately, as the success of innovative efforts is highly uncertain and usually only becomes apparent in the medium or long term. DG COMP is less inclined to accept efficiencies that are not evident in the short term¹⁶. Because of their higher uncertainty, efficiencies that come into effect in the longer term will be more likely to fail the 'verifiability' condition (see Table 2). Obviously, innovation effects, with their inherent uncertain and longer-term characteristics, are more difficult to predict and assess, but this should not be translated into a reluctance to do so, as this would almost by definition rule out the inclusion of innovation effects. As we will show, economists have developed and continue to develop a body of know-how that can provide a good framework for assessing *ex ante* the factors that determine the size and direction of post-merger innovation effects.

4 CAN POST-MERGER INNOVATION EFFECTS BE ASSESSED EX ANTE? INSIGHTS FROM THE THEORETICAL AND EMPIRICAL LITERATURE

Academic literature has looked at the link between mergers and R&D investment, and at innovation outcomes following mergers. Although clearly more work needs to be done, there are already robust insights that can be drawn out to help competition policy authorities when assessing the likely impact of a merger on innovation. We will briefly review the most relevant insights from both theoretical and empirical literature. We concentrate on the direct effect of mergers on innovation.

12. The classification of industries as medium and high-tech is based on the OECD classification. The classification of firms into innovation-active or not is done on the basis of their presence in the EC-IPTS Scoreboard of top R&D spenders (see: <http://iri.jrc.ec.europa.eu/research/scoreboard.htm>). The sector definition used here may be too broad to reflect the market associated with the specific merger case. Similarly, firms may be among the top R&D spenders, but not necessarily active in R&D for the specific market involved in the case. On the other hand, firms may be innovation-active, but not big enough to qualify for the scoreboard.

13. Out of the total of 28 innovation-sensitive cases, 20 involved firms that are in the scoreboard of largest R&D spenders (see footnote 12). Twelve cases score positive on both criteria (including three out of the four claiming cases). All 12 aborted/withdrawn cases can be classified as innovation-sensitive. Seven of these cases involved firms that are in the largest R&D spenders scoreboard. Three of these cases scored positive on both criteria.

14. 'Failure to provide information on efficiencies will not be taken to imply that the proposed concentration does not create efficiencies or that the rationale for the concentration is to increase market power. Not providing the requested information on efficiencies at the notification stage does not preclude providing the information at a later stage' [Commission Regulation (EC) No.802/2004]. Note that innovation could still be of relevance in any of the other 21 cases that

'Merging parties in innovation-sensitive cases did not claim efficiencies perhaps because the innovation effects were likely to be negative. The fact that DG COMP is not assessing innovation effects if they are not claimed could preclude assessment of negative effects, potentially harming consumers.'

were not considered highly innovation-intensive. For instance, one of the four cases in which innovation-related efficiencies were alleged is not within the set of innovation-intensive cases.

15. It is not the aim of this Policy Contribution to take part in the debate about which welfare standard – consumer surplus vs. total welfare – is the most appropriate.

16. 'In general, the longer the start of the efficiencies is projected into the future, the less probability the Commission may be able to assign to the efficiencies actually being brought about' (ECMG, paragraph 86).

17. For example Caves (1989), Cohen and Levin (1989), Röller *et al* (2001), Kamien and Schwartz (1982), De Bondt (1997).

18. For example Hall (1999), Hitt *et al* (1991), Ravenscraft and Scherer (1987), Valentini (2011).

19. See Cassiman *et al* (2005) for a review of the analyses of the impact of technology and market-relatedness together with other characteristics. Other factors beyond the technology-relatedness of the merging parties include the debt-financing character of the deal and the quality of the pre- and post-acquisition integration strategy.

The indirect effects on innovation which run through the product market effect are typically taken into account elsewhere in the case analysis.

Theoretical studies on industrial organisation provide arguments for both positive and negative effects on the technological activities of the merging firms after a merger¹⁷:

- When the merger allows for the elimination of duplicated R&D, R&D inputs will decrease after the merger, but R&D efficiency will increase.
- A merger might realise scale and/or scope economies and/or synergies in R&D by combining the R&D capabilities of both merging parties, in which case merged firms have a bigger incentive to perform R&D than before their merger. This can, however, be counteracted by increased organisational complexity.
- A merger might reduce R&D competition. The possibility to better coordinate R&D investment after the merger will typically lead to lower R&D expenditures, unless technology spillovers are important, in which case a merger will lead to higher R&D expenditures.

In the absence of unidirectional effects predicted from theory, it is no surprise that earlier empirical studies generated mixed findings: sometimes positive, sometimes insignificant, but often negative effects on the post-acquisition R&D input and output of acquiring firms¹⁸.

More recent work has looked at factors that help to produce more clearcut predictions. Of particular use for better determining the impact of mergers on R&D is the extent to which the technologies and product markets in which the merging parties were active are related¹⁹. The impact of a merger between firms that operate in the same technological field is expected to lead to a rationalisation of the R&D process, while merging firms active in complementary technological fields are more likely to realise synergies in the R&D process through their merger. Similarly a common technology base facilitates the integration of the merging parties' knowledge bases.

Table 3 summarises the different potential effects of mergers on R&D. A quick glance at the table immediately shows why previous literature has found mixed results: the total effect of a merger on

Table 3: Predicted effects of mergers on the R&D process by technology relatedness

Effects of merger	Impact (positive/negative/unknown)		Likelihood that predicted effect may occur when...		
	R&D input	R&D efficiency	Firms are active in same product markets	Firms are active in same technological fields	Firms are active in complementary technological fields
Indivisibilities/specialisation: spreading fixed cost of R&D over more R&D output [scale]	+	+	Medium	High	Low
Indivisibilities/specialisation: spreading fixed cost of R&D over more and different types of R&D output [scope]	+	+	Medium	Low	High
Elimination of common R&D inputs	–	+	High	High	Low
Synergies: combining different R&D knowledge inputs	+	+	Low	Low	High
Technology market power and appropriation	?	+	Medium	High	Low
Internal organisational changes	–	–	High	Medium	Low
			R&D input/R&D performance		
TOTAL EFFECT	?	?	– / +?	? / +	+ / +

Source: Adapted from Cassiman *et al* (2005).

R&D inputs and R&D efficiency can increase or decrease depending on which effect dominates the merger. After classifying the merger according to the technological and product-market relatedness of merging parties, the effect on the R&D process becomes more clear-cut. For companies with complementary technologies, mergers are predicted to lead to more R&D inputs and greater R&D efficiency. Companies with similar technologies are more likely than companies with complementary technologies to cut R&D inputs. In any case, a positive effect on R&D efficiency is more likely. Mergers between companies in the same product market, however, are more likely to have a negative effect on R&D inputs and R&D efficiency,

compared to companies that do not operate in the same product market.

Where empirical studies identified the technology-relatedness between target and acquirer, it was possible to come up with more clear-cut empirical evidence on the impact of mergers on R&D. As an illustration, Box 2 discusses the empirical results from Cassiman *et al* (2005) in some detail. Although the number of cases in this study is small and not random, and only a subset of relevant moderating factors could be analysed, the study is interesting because it illustrates an effective methodology to better assess the innovation effects of mergers. It uses a combination of

BOX 2: CASSIMAN *et al* (2005) STUDY ON THE IMPACT OF MERGERS ON INNOVATION.

Using information on 31 in-depth cases of horizontal M&A deals in medium and high-tech industries, Cassiman *et al* (2005) shows that technology-relatedness between M&A partners distinctly affects the impact on innovation. The study simultaneously also corrects for product market-relatedness between merging parties. The case studies were based on a structured questionnaire that collected qualitative data in a standardised format suitable for statistical analysis. Respondents were asked to assess the market- and technology-relatedness of the partners involved. This survey information was cross-checked with available public information on detailed production and patent classification information. In order to assess technology relatedness and innovation effects, a combination of survey and public information was used.

The results can be summarised as follows:

When merged entities are technologically complementary, they become more active R&D performers after the M&A. R&D efficiency increases more when merged entities are technologically complementary than when they are substitutive. Complementary technology firms redeploy resources across the new entity to create critical mass in technological fields that are new to the firm, and to develop new competences.

In sharp contrast, when merged entities are technologically substitutive, they significantly decrease

their R&D level after the M&A. As predicted, such firms rely on the rationalisation of R&D activity to a much greater extent than firms with complementary technology specialisation. In addition, organisational problems engendered by the deal, especially those associated with the motivation of R&D personnel, were found to be more serious for firms with the same – rather than complementary – technological capabilities. The reduction of R&D is more evident if merged entities were rivals in the product market prior to their merger.

In addition, mergers between firms with overlapping technological knowledge are more often associated with a reduction of competition in technology markets, than those between firms with complementary strengths.

These results indicate that mergers between firms in the same technological fields have a negative impact on R&D inputs and performance compared to parties in complementary technological fields. Similarly, mergers between non-rivals (ie companies not in the same product market) have a more positive impact on R&D performance than mergers of rivals.

Other influencing factors are the extent of debt-financing of the merger, if the merger had an explicit innovation motive, if it was cross-border, and if partners collaborated prior to the merger.

Source: Cassiman, B., Colombo, M., Garrone, P. and R. Veugelers (2005) 'The impact of M&A on the R&D process: an empirical analysis of the role of technological and market relatedness', *Research Policy* 34, 2, 195-220

theoretical frameworks for more clear-cut predictions. It also shows that it is possible to construct empirical proxies to measure moderating factors, such as technology-relatedness. It uses a combination of publicly available information and privately obtained survey evidence. A series of follow-up studies have confirmed the importance of a framework including technology- and market-relatedness for identifying the innovation effects of mergers (eg Valentini, 2012; Ornaghi, 2009).

To summarise, the academic literature shows there is no automatic relationship between mergers and innovation. To assess innovation effects, one needs a case-by-case analysis. But the academic literature does help case analysts to analyse innovation effects from mergers *ex ante* by identifying factors that reduce the ambivalence of expected effects. Furthermore, these factors can be empirically verified and assessed *ex ante*.

An important factor to consider is the technology-relatedness of the merging parties. Mergers between companies with compatible or similar technologies tend to have a negative effect on innovation because of R&D rationalisation. Hence, dynamic efficiency gains are less likely for mergers involving companies with similar technologies. Furthermore, technology competition is more likely to diminish after mergers between companies with similar technologies; mergers between companies that have complementary technologies are more likely to lead to synergies and thus have positive implications for innovation. But these effects are conditional. Tight management of the post-deal integration process, which adequately deals with organisational and motivational problems, is needed to turn potential dynamic effects into real effects. A number of other influencing factors will also need to be assessed alongside technology relatedness.

5 ASSESSING INNOVATION EFFECTS FROM MERGERS: SOME RECOMMENDATIONS FOR EU COMPETITION POLICY

In order to tackle the problems that obstruct the effective treatment of innovation effects in merger cases, the legal framework and implementation methodologies need to be reconsidered.

Concerning the legal framework, the 'informational efficiency offence' needs to be addressed. This is when parties prefer not to claim dynamic efficiencies, even if they exist, in order to not create the impression that they need an efficiency defence to compensate for anti-competitive effects. There are several ways in which this problem could be solved, but we believe that the best option would be to make reporting of efficiencies by the merging parties mandatory, thus removing the signalling value from (not) claiming.

Mandatory reporting would also alleviate another problem, namely that DG COMP only analyses dynamic efficiencies when they are claimed. This problem results in the shortcoming that mergers with dynamic efficiencies can be wrongly precluded, not get the appropriate remedies, or be withdrawn in anticipation of a negative decision: in other words, good mergers would be prevented²⁰. But also it can lead to situations in which mergers with negative dynamic efficiencies are cleared or do not get the appropriate remedies. In other words, bad mergers would not be blocked²¹. The scope for bad mergers being cleared could be quite substantial, particularly when merging parties are product-market rivals and have similar technologies, as the academic literature shows. In order to detect these negative cases, which will result in negative welfare effects, DG COMP should exercise its power to investigate innovation (in)efficiencies independently, rather than investigating them only when efficiencies are claimed by the merging parties.

That brings us to the next problem: only the cases that go into Phase II are analysed for dynamic efficiencies, ie when there are significant competition concerns. Actually, one could use the academic literature to justify the restriction of dynamic efficiency analysis to Phase II cases²²: as previously discussed, the recent literature shows that positive effects on innovation from mergers typically arise when the merging companies are neither direct competitors in the product market, nor operate in the same technological field. Such non-horizontal mergers only rarely raise significant competition concerns. Thus, DG COMP presumably anyway clears cases that involve no negative dynamic efficiency effects. In addition, requiring innovation effects to

20. These cases – Type I errors – are mergers that are prevented because they would imply an increase in the price level, but the assessment does not take into account that the merger would also entail a bigger innovation-efficiency impact (which is not considered).

21. These cases – Type II errors – are mergers that are cleared because they have no effect on prices, though they would reduce innovation in the marketplace, which is not considered.

22. As has been done by US competition authorities (see OECD, 2007).

be examined in all Phase I cases would imply an unrealistic burden on DG COMP's case-handling capacity. Notwithstanding these arguments, one needs to be aware that ignoring innovation effects in Phase I cases also entails a cost, particularly with respect to detecting possible negative effects on innovation *by third parties*. This is especially the case when the merging parties hold strong positions in the same technologies, even if they are not rivals in the product market. An analysis of Phase I cases for innovation-related effects would be needed to detect these errors.

A final problem to be addressed is the reluctance of DG COMP to accept innovation effect considerations because of lack of 'verifiability' of innovation effects. DG COMP's reluctance to assess efficiencies that are uncertain and relatively distant in time, may *de facto* exclude the treatment of innovation effects, as they are inherently uncertain and longer-term. However, uncertainty does not mean we cannot make predictions about expected outcomes. In this Policy Contribution, we have tried to show that it is possible to develop good theoretical frameworks, empirically validated, which can be used to predict the occurrence and likely outcome of innovation effects. The factors that condition innovation effects can be empirically assessed by case handlers. For instance, the technology relatedness of the merging parties can be assessed by combining public (ie patent) and private (ie from questionnaires) information.

In view of the internal nature of some innovation components that need to be assessed, reporting by the parties involved may become an important information source for case analysts. The merging parties may over- or misreport (as they may do in general), but this does not preclude DG COMP from continuing with its assessment. DG COMP has to evaluate the quality and verifiability of the information provided, as it does for any

information coming from the merging companies, and to look for both external (ie third parties' submissions or publicly available information) and further internal evidence to contrast and complement the reports of the parties to the merger.

This is particularly the case for mergers that are potentially harmful to innovation, in which the parties' and DG COMP's views of the post-merger effects will be most misaligned. We believe that the existence of possible innovation-related inefficiencies is precisely why the burden of proof should not be placed on the notifying parties. It should be for DG COMP to assess and substantiate the innovation impact of the merger.

The development of an *ex-ante* framework for assessing innovation effects from a merger could be substantiated with *ex-post* empirical analysis of the relevant cases. This *ex-post* assessment of cases would help to reinforce the framework initially set by the Commission. Another complementary tool could be the monitoring of particular innovation-intensive sectors, which would help competition authorities to better understand the details of the innovation dynamics and mechanisms of specific markets in which future merging companies might operate.

Given the increasing importance of innovation in many markets, we strongly believe that a rule of reason, or weighting of the positive and negative innovation effects, should in principle be applied for all proposed mergers, but *a fortiori* for all Phase II mergers. DG COMP should develop a framework to assess innovation effects within merger control. This is not an easy task, but it is feasible. The introduction of such a framework would allow the European Commission to better assess both the pro and anti-competitive effects of a merger, and to further develop an integrated effects-based approach.

REFERENCES

- Ahuja G. and R. Katila (2001) 'Technological acquisitions and the innovation performance of acquiring firms: A longitudinal study', *Strategic Management Journal* 22, 197-220
- Blonigen, B. and C. Taylor (2000) 'R&D activity and acquisitions in High Technology Industries: evidence from the US Electronics Industry', *Journal of Industrial Economics* 47, 1, 47-71
- Cassiman B., M. G. Colombo, P. Garrone and R. Veugelers (2005) 'The impact of M&A on the R&D process: an empirical analysis of the role of technological- and market-relatedness', *Research Policy* 34: 195-220
- Caves, R.E. (1989) 'Mergers, takeovers, and economic efficiency', *International Journal of Industrial Organisation* vol. 7, p.152
- Cohen, W. and R. Levin (1989) 'Empirical Studies of Innovation and Market Structure', in Schmalensee, R. and R. Willig (eds) *Handbook of Industrial Organisation*, p. 1060-1107, North Holland
- De Bondt, R. (1997) 'Spillovers and innovative activities', *International Journal of Industrial Organisation* vol. 15, 1-28
- ECMG (2004) *Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings* (2004/C 31/03), available at [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52004XC0205\(02\):EN:NOT](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52004XC0205(02):EN:NOT)
- ECMR (2004) *Council Regulation (EC) No 139/2004 on the control of concentrations between undertakings* (the EC Merger Regulation), available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32004R0139:EN:NOT>
- Hall, B. (1990) 'The Impact of Corporate Restructuring on Industrial Research and Development', *Brookings Papers on Economic Activity*, The Brookings Institution
- Hall, B. (1999) 'Mergers and R&D revisited', *mimeo*
- Hitt, M.A., R. E. Hoskisson, R. D. Ireland and J. S. Harrison (1991) 'Effects of acquisitions on R&D inputs and outputs', *Academy of Management Journal* 34(3), pp 693-706
- Kamien, M. and N. Schwartz (1982) *Market Structure and Innovation*, Cambridge University Press
- Neven, D. and P. Seabright (2003) 'Synergies and dynamic efficiencies in merger analysis', Brussels, DG ECFIN
- Ornaghi, C. (2009) 'Mergers and Innovation in Big Pharma', *International Journal of Industrial Organisation* vol. 27, 170-179
- OECD (2007) *US position in dynamic efficiencies*, DAF/COMP (41)
- Ravenscraft, D.J. and F. M. Scherer (1987) *Mergers, sell-offs, and economic efficiency*, The Brookings Institution, Washington DC
- Röller, L.-H., J. Stennek and F. Verboven (2001) 'Efficiency gains from mergers', *European Economy* no.5
- Röller, L.-H. (2010) *Efficiencies in EU merger control: do they matter*, ESMT
- Valentini, G. (2012) 'Measuring the effect of M&A on patenting quantity and quality', *Strategic Management Journal* 33, 336-346