

Managing Disruptive Innovation

The Incumbent Firm Perspective



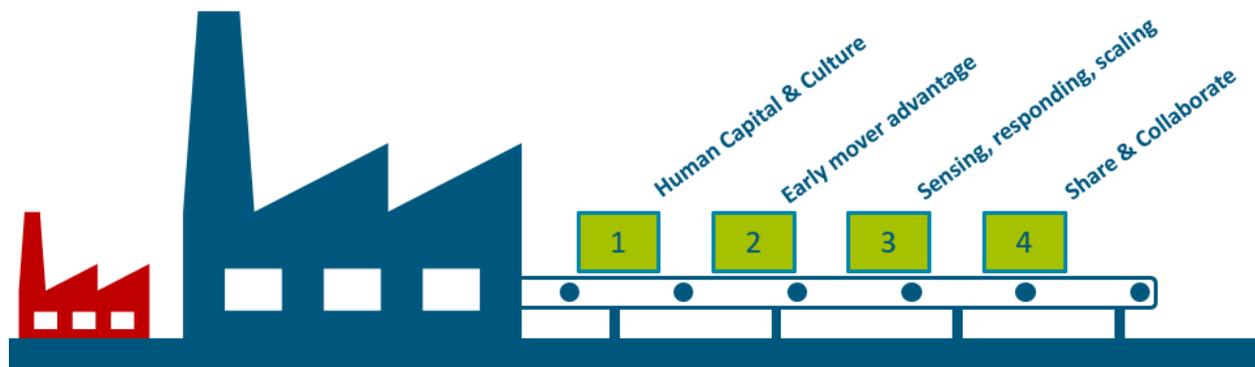
Managing Disruptive Innovation – The Incumbent Firm Perspective

Today's rapidly changing business environment requires organisations to be able to quickly adapt and act. As an independent international engineering and project management consultancy, we have been working with clients to successfully deliver projects which contribute to improving living circumstances around the world for 135 years. During our projects we noticed that incumbent firms are facing innovation challenges and disruptive threats. These innovative ideas can be both 'business model' and 'technology' driven. In contrast to start-ups, it makes it especially difficult for incumbent firms to cope with disruption since these firms already have a successful core business model¹. Here, "disruption" can be defined as a process where another firm with fewer resources is able to successfully challenge an incumbent its business.

Publicly known examples of companies which successfully penetrated mature markets causing 'disruption' include Amazon, Netflix and Ryanair². Still relatively new innovations range from "self-driving electric trucks with no cab" to "digital twins". In short, tectonic shifts are occurring across all major industries.

What makes it difficult for incumbents is that they are balancing between current and future opportunities. In other words, incumbents must both focus on efficiently operating today while innovating effectively for tomorrow. We have noticed that incumbents find it difficult to develop the right organisational capabilities to respond to changes and sometimes there is even a systematic underinvestment in disruptive opportunities³. In short, both the 'internal development of disruptive innovations' and 'the defence against disruptive threats' are a major challenge for incumbents. Since we have frequent conversations with our clients on the disruptive innovation topic we have written this paper to share our four main insights on the following main question:

"How can incumbent firms cope with potentially disruptive innovations?"



Our Four Main Insights on Building a Strong Foundation

Our main insights include that the organisational capabilities **human capital and culture** have been proven to be crucial for an incumbent its success in the light of disruptive innovation. Also, we noticed that being an **early mover** can be a reprieve and incumbents should follow the **three-step approach** 'sensing, responding and scaling'. Finally, the **acquisition of external capabilities and collaboration** with other firms is seen as an effective approach for incumbents, especially if the disruptive threat is technology driven. This because the required capabilities can be acquired externally or to boost the development of internal capabilities by for instance working together with universities.

1 Sauberschwartz, L. and Weiss, L. (2018) 'How Corporations Can Win the Race Against Disruptive Startups', in Digital Marketplaces Unleashed. Berlin, Springer Berlin Heidelberg, pp. 155–167.

2 Kaulio, M., Thorén, K. and Rohrbeck, R. (2016) 'Incumbent Response to Disruptive Innovation: The Case of the Swedish-Finnish Telecom Operator TeliaSonera AB'.

3 Ansari, S., Garud, R. and Kumaraswamy, A. (2015) 'The Disruptor's Dilemma: Tivo And the U.S. Television Ecosystem', Strategic Management Journal.



Insight 1 – Organisational capabilities as ‘human capital’ and ‘culture’ play an essential role for incumbents to cope with disruptive innovations.

Commitment of top management, the presence of middle management, the motivation of individuals and an aligned recruitment strategy are vital for an incumbent firm to cope with potentially disruptive innovations⁴. Furthermore, the capability to motivate individuals and managerial beliefs will influence the performance of these managers⁵. As a well-known scientist once said: *“The world as we have created it is a process of our thinking. It cannot be changed without changing our thinking.”* – Albert Einstein.

This quote is highly applicable to this topic and it implies that executives within an incumbent firm should understand the dynamics of innovation and should be able to recognize and change their strategic beliefs over time to successfully manage disruptive innovations. It is likely that the fundamental beliefs will influence their reaction and acting on disruptive innovations. The first step of achieving the required capability is becoming aware as manager of their fundamental assumptions driving their decision making. In other words, managers should question their selves to verify if their own assumptions and beliefs are valid in the context of disruptive innovation⁶.

From previous projects we have observed that the intangible organisational capability ‘culture’ is crucial for an incumbent its success. Innovation should be the key value and responsibility of all involved employees and it is not something that companies can just ‘tick off’ their lists at the end of the day. A culture with high flexibility, creativity and risk-taking should be introduced, well-kept and appreciated in order to cope with disruptive innovations. Especially, the willingness to take risk-taking is seen as the biggest positive influence on the required transformation capabilities to enhance radical and disruptive innovation. Generally, incumbents should naturally balance their ‘open’ and ‘risk-taking’ culture and incumbents should pay attention to that a collaborative working atmosphere can have negative effect on organisational change⁷.

We also see that incumbents are more likely to proactively resist adaption of new business models if they asses it as a threat. This phenomenon is called the ‘deer in the headlights’ response to disruptive innovation and is especially apparent in the short term for small incumbent firms. Overall, we advise managers of incumbent firms to share positive risk experience, since these positive learning experience will improve the incumbent decision-making process.

Finally, incumbents should be aware of the country specific culture of the shareholders, since this can influence the company its short- and long-term goals and thus ability to innovate⁸.

4 Kaplan, S. (2003) ‘Discontinuities and senior management: assessing the role of recognition in pharmaceutical firm response to biotechnology’, *Industrial and Corporate Change*, 12(2), pp. 203–233.

Koen, P. A., Bertels, H. M. J. and Elsum, I. R. (2011) ‘The Three Faces of Business Model Innovation: Challenges for Established Firms’, *Research-Technology Management*, 54(3), pp. 52–59.

Börjesson, S., Elmquist, M. and Hooge, S. (2014) ‘The challenges of innovation capability building: Learning from longitudinal studies of innovation efforts at Renault and Volvo Cars’, *Journal of Engineering and Technology Management*.

5 Pihlajamaa, M. (2017) ‘Going the extra mile: Managing individual motivation in radical innovation development’, *Journal of Engineering and Technology Management*, 43, pp. 48–66.

6 Bockmühl, S. et al. (2011) ‘Intensity, timeliness, and success of incumbent response to technological discontinuities: A synthesis and empirical investigation’, *Review of Managerial Science*, 5(4), pp. 265–289.

7 Herrmann, A., Gassmann, O. and Eisert, U. (2007) ‘An empirical study of the antecedents for radical product innovations and capabilities for transformation’, *Journal of Engineering and Technology Management*, 24(1–2), pp. 92–120.

Wan, F., Williamson, P. J. and Yin, E. (2015) ‘Antecedents and implications of disruptive innovation: Evidence from China’, *Technovation*. Elsevier, 39–40(1), pp. 94–104.

8 Ho, J. C. and Chen, H. (2018) ‘Managing the Disruptive and Sustaining the Disrupted: The Case of Kodak and Fujifilm in the Face of Digital Disruption’, *Review of Policy Research*, 35(3), pp. 352–371.



Insight 2 – We noticed an early mover advantage for incumbent firms

In our daily consultancy work, we clearly see the difference between greenfield and brownfield projects. Greenfield projects can be a major opportunity for incumbent firms since a firm is not limited by the constraints which can be present in brownfield projects. Whereas with brownfield projects the reality can sometimes be harsh since it is sometimes better to demolish everything and start over.

We have seen many cases where our client had chosen the most future proof option and accepted the higher cost for demolishing parts of the existing facility. These types of decisions can be extremely difficult, but it can prevent even higher demolishing-cost in future stages. It has also enabled firms to update their facility much easier in upcoming years. In the more traditional markets such as the bulk handling industry, there are more fast followers instead of early movers. Here, firms are most often risk adverse during early stages, and when an early mover has a proof of concept, other firms will respond and scale. Often the billion-dollar question arises: when does it pay of to be an early mover?

The difference in outcomes may be explained by the type of market since disruption in the bulk, heavy industry and pharmaceutical industry is commonly technology driven instead of market-driven. This implies that especially incumbents in technology driven markets should strive to be an early mover.

Investing early in internal organisational capabilities or acquiring external organisational capabilities appreciate in value over time (again, this holds especially true in technology driven markets). Important note is that both small-scale early investments and ‘big bets’ do not always pay off⁹. But we noticed that our most successful ‘early mover’ clients, in both greenfield and brownfield projects, always had an ‘ambitious’ and ‘visionary’ masterplan ready, especially with a clear vision on the technology aspect.

Furthermore, we noticed a significant correlation between early movers and the internal development of organisational capabilities, and a significant correlation between late movers and a focus on acquisition capabilities. Logically, late movers had to catch up with the early movers and the acquisition of external capabilities served as one of the solutions.

Positively, being an early mover will provide greater flexibility and visibility within the organisation. However, being an early mover is not always a guarantee of success. It can be a disadvantage since under circumstances that there is less time pressure, it will be hard to gain commitment of employees to the new business¹⁰.

Overall, we found that it is useful to obtain external support early on in the process since it will provide greater flexibility and visibility within the organisation. Consequently, this will result in forward commitment from top management¹¹.

⁹ Birkinshaw, J., Visnjic, I. and Best, S. (2018) ‘Responding to a Potentially Disruptive Technology: How Big Pharma Embraced Biotechnology’, *California Management Review*, 60(4), pp. 74–100.

¹⁰ van Moorsel, H. et al. (2012) ‘Incumbent heterogeneity in creative destruction: a study of three Dutch newspaper organisations’, *Technology Analysis & Strategic Management*, 24(10), pp. 1051–1070.

¹¹ Bruneel, J. et al. (2012) ‘Improving the success of radical innovation projects within established firms: engaging employees across different hierarchal levels’, *Technology Analysis & Strategic Management*, 24(9), pp. 951–965.



Insight 3 – Using the three-step approach: (1) sensing, (2) responding, (3) scaling.

An effective defence strategy in the light of disruptive innovation is to first understand, and correctly interpret the environment. Next, the firm should initiate the necessary change. And finally, the firm should focus on engagement within the company. This can be summarised as the following approach¹²:

- Sensing - monitoring and interpreting environment
- Responding - building organisational capabilities
- Scaling - focus on building internal commitment

Sensing

Incumbents should have the ability to absorb knowledge from various sources and should be aware of trends in the market to ensure that they can cope with disruptive innovations. We also see that incumbents who are active in different markets are readier to cope with potentially disruptive innovations and can quickly tap into new business opportunities¹³. We also identified that firms with a multinational strategy are more capable to cope with disruption and have more long-term success. Having location bound firm-specific advantages and by promoting proactive thinking in each subsidiary will help incumbents to cope with disruptive innovation. This in contrast to firms using a global strategy, which use one corporate office for their global strategy¹⁴. Furthermore, we found that incumbents who identify and control the splitting variable are more prepared to cope with discontinuous change. The splitting variable in the semiconductor industry can be for instance 'cost advantage', where the splitting variable in the bulk industry can be 'user convenience'¹⁵.

Responding & Scaling

Next, we believe that incumbents should focus on building the ambidextrous organisational capabilities. These ambidextrous capabilities entail the balance between the focus on the current business and future business or threat. This means that companies should be able to focus both on sustaining and disruptive innovations and can be achieved by being flexible. Otherwise the incumbent should make the trade-off between cannibalising the current products or to underserve current customers¹⁶.

Furthermore, the ability of a firm to make the customer the focal point and to have a deep-rooted understanding of the supply network are both key to cope with potentially disruptive innovation¹⁷. Finally, the firm should focus on building internal commitment. In the light of innovation, it is vital to create a clear vision and bundle forces of people together¹⁸. Hiring capable executives, leaders and employees will support incumbent firms to cope with radical changes and thus this will support incumbent firms with insuring against disruptive innovation.

¹² Sarkar, S., Osijevskyy, O. and Clegg, S. R. (2018) 'Incumbent capability enhancement in response to radical innovations', *European Management Journal*. Elsevier Ltd, 36(3), pp. 353–365.

¹³ Kranz, J. J., Hanelt, A. and Kolbe, L. M. (2016) 'Understanding the influence of absorptive capacity and ambidexterity on the process of business model change - the case of on-premise and cloud-computing software', *Information Systems Journal*, 26(5), pp. 477–517.

¹⁴ Cowden, B. and Alhorr, H. (2013) 'Disruptive innovation in multinational enterprises', *Multinational Business Review*, 21(4), pp. 358–371. doi: 10.1108/MBR-05-2013-0027.

¹⁵ Kim, S. C. and Shin, M. S. (2012) 'A new approach for overcoming innovator's dilemma: the catastrophe matrix of self-disruption', *Asian Journal of Technology Innovation*, 20(1), pp. 33–50.

¹⁶ Bohnsack, R. and Pinkse, J. (2017) 'Value Propositions for Disruptive Technologies: Reconfiguration Tactics in the Case of Electric Vehicles', *California Management Review*, 59(4), pp. 79–96.

¹⁷ Pérez, L., Dos Santos Paulino, V. and Cambra-Fierro, J. (2017) 'Taking advantage of disruptive innovation through changes in value networks: insights from the space industry', *Supply Chain Management: An International Journal*, 22(2), pp. 97–106

¹⁸ Heyden, M. L. M. et al. (2012) 'Top Management Team Search and New Knowledge Creation', *International Studies of Management & Organization*, 42(4), pp. 27–51



Insight 4 – Share & Collaborate: getting support from external firms can help incumbents to gain the right capabilities to cope with disruptive innovations.

Many of our clients start to reach the most optimal level within their factory or warehouse and will eventually face constraints imposed by inefficiencies part of other operations in their supply chain. However, companies should be aware that the focus on the broader 'supply chain' is clearly a more demanding task since it involves the 'supply network' instead of a 'single process'. There are exponentially more variables influencing the whole supply chain, in contrast to the individual stages within for instance a factory. It is likely that also more products and services are part of the supply chain, which makes data handling potentially more difficult. Finally, fluctuation in for instance the arrival process of one factory can be controlled to some extent, but in a supply chain it is more difficult to do so.

Collaboration with other firms can help an incumbent to develop the required supply chain, technological and marketing capabilities needed to cope with disruptive innovations. Developing these capabilities and teaming up with either suppliers, universities or consultancy firms will improve a firm's effectiveness in light of disruptive innovations¹⁹. Fast throughput throughout the whole supply network is still valuable and lower inventory levels can save even more cost throughout the supply network. This is also valid for reducing waste (e.g. time, motion, waiting, defects) in the supply chain and improving flexibility and minimising variability will not only support one factory or warehouse, but will benefit the whole network.

We see that collaboration with customers help incumbents to proactively innovate in a disruptive way. Incumbents should have the customers as the focal point and should have a clear understanding of its overall network. This is the only way to drive future opportunities in a disruptive change context. The company should be flexible in terms of manufacturing capacity and product design, and collaboration with the network will aid these organisational capabilities. Collaboration can also be initiated together with universities to boost internal knowledge and with other start-ups who have unique and agile capabilities which can boost the incumbent's performance and incumbents should be open to collaborate with entrant firms²⁰. Teaming up with universities helps the incumbents in the technology-driven industries to build expertise in a faster way. Furthermore, we found that incumbents are more effective if they have more private than public partners²¹.

When incumbents are aware that they do not possess the right abilities, the acquisitions of the right external capabilities can offer a solution in the light of disruptive innovation. Therefore, developing acquisition capabilities from an early stage will enable incumbents to monitor potential external firms and is especially important in a technology-driven market. The acquisition of external capabilities is especially important when the disruptive threat is technology-driven²². Finally, we found that especially the early-mover approaches involving 'acquisitions' and 'alliances' were proven to be the most beneficial.

19 Hao, B. and Feng, Y. (2016) 'How networks influence radical innovation: the effects of heterogeneity of network ties and crowding out', *Journal of Business and Industrial Marketing*, 31(6), pp. 758–770

20 Kaltenecker, N., Hess, T. and Huesig, S. (2015) 'Managing potentially disruptive innovations in software companies: Transforming from On-premises to the On-demand', *Journal of Strategic Information Systems*. Elsevier B.V., 24(4), pp. 234–250.
Sandström, C., Berglund, H. and Magnusson, M. (2014) 'Symmetric Assumptions in the Theory of Disruptive Innovation: Theoretical and Managerial Implications', *Creativity and Innovation Management*, 23(4), pp. 472–483.

Zalan, T. and Toufaily, E. (2017) 'The Promise of Fintech in Emerging Markets: Not as Disruptive', *Contemporary Economics*, number 11(4), pp. 415–430. doi: 10.5709/ce.1897-9254.253.

21 Qi Dong, J., McCarthy, K. J. and Schoenmakers, W. W. M. E. (2017) 'How Central Is Too Central? Organizing Interorganizational Collaboration Networks for Breakthrough Innovation', *Journal of Product Innovation Management*, 34(4), pp. 526–542.

22 Habtay, S. R. and Holmén, M. (2014) 'Incumbents' responses to disruptive business model innovation: the moderating role of technology vs. market-driven innovation', *International Journal of Entrepreneurship and Innovation Management*, 18(4), p. 289.

Conclusion on this Disruptive Innovation Topic

Our world is in transition. Faced with the challenges created by scarcity of resources, climate change, urban redevelopment, and more, there is a desperate need for creative ideas and new ways of thinking.

With this paper, we hope to have created a brief and overarching view of the disruptive innovation topic and we aim to support incumbent firms to understand what organisational capabilities can alter or rejuvenate their business models to cope with potentially disruptive innovations.

Innovation is integral to every business, including our own. We recognise its importance in everything we do. Innovation helps businesses thrive through renewing and adapting products, services business models and processes.

What are your thoughts?

- Do you recognise the trends, best practices and responses of incumbents to disruptive innovations?
- Do you want to develop innovative solutions and gain fresh insights?
- Are you using digital technologies to transform your operations, anticipating the challenges that the world is facing?

We are happy to meet, and bring together the domain knowledge of our experts with your team. Collaboratively we can identify your business challenges, explore the barriers to change or adaptation, and offer effective advice.

Contact us today, to learn more about how we can help you in accelerating and future-proofing your business transition.

Nick Vermeulen

Consultant Supply Chain & Operations

+31 88 348 3588

nick.vermeulen@rhdhv.com

Jos Siemons

Strategic Business Consultant

+31 883483243

jos.siemons@rhdhv.com

Johan Pruisken

Director Resources, Logistics & Power

+31 88 348 90 19

johan.pruisken@rhdhv.com

References

1. **Sauberschwarz, L. and Weiss, L.** (2018) 'How Corporations Can Win the Race Against Disruptive Startups', in *Digital Marketplaces Unleashed*. Berlin, Springer Berlin Heidelberg, pp. 155–167.
2. **Kaulio, M., Thorén, K. and Rohrbeck, R.** (2016) 'Incumbent Response to Disruptive Innovation: The Case of the Swedish-Finnish Telecom Operator TeliaSonera AB'.
3. **Ansari, S., Garud, R. and Kumaraswamy, A.** (2015) 'The Disruptor's Dilemma: Tivo And the U.S. Television Ecosystem', *Strategic Management Journal*.
4. **Kaplan, S.** (2003) 'Discontinuities and senior management: assessing the role of recognition in pharmaceutical firm response to biotechnology', *Industrial and Corporate Change*, 12(2), pp. 203–233.
Koen, P. A., Bertels, H. M. J. and Elsum, I. R. (2011) 'The Three Faces of Business Model Innovation: Challenges for Established Firms', *Research-Technology Management*, 54(3), pp. 52–59.
Börjesson, S., Elmquist, M. and Hooge, S. (2014) 'The challenges of innovation capability building: Learning from longitudinal studies of innovation efforts at Renault and Volvo Cars', *Journal of Engineering and Technology Management*.
5. **Pihlajamaa, M.** (2017) 'Going the extra mile: Managing individual motivation in radical innovation development', *Journal of Engineering and Technology Management*. 43, pp. 48–66.
6. **Bockmühl, S. et al.** (2011) 'Intensity, timeliness, and success of incumbent response to technological discontinuities: A synthesis and empirical investigation', *Review of Managerial Science*, 5(4), pp. 265–289.
7. **Herrmann, A., Gassmann, O. and Eisert, U.** (2007) 'An empirical study of the antecedents for radical product innovations and capabilities for transformation', *Journal of Engineering and Technology Management*, 24(1–2), pp. 92–120.
Wan, F., Williamson, P. J. and Yin, E. (2015) 'Antecedents and implications of disruptive innovation: Evidence from China', *Technovation*. Elsevier, 39–40(1), pp. 94–104.
8. **Ho, J. C. and Chen, H.** (2018) 'Managing the Disruptive and Sustaining the Disrupted: The Case of Kodak and Fujifilm in the Face of Digital Disruption', *Review of Policy Research*, 35(3), pp. 352–371.
9. **van Moorsel, H. et al.** (2012) 'Incumbent heterogeneity in creative destruction: a study of three Dutch newspaper organisations', *Technology Analysis & Strategic Management*, 24(10), pp. 1051–1070.
10. **Birkinshaw, J., Visnjic, I. and Best, S.** (2018) 'Responding to a Potentially Disruptive Technology: How Big Pharma Embraced Biotechnology', *California Management Review*, 60(4), pp. 74–100.
11. **Bruneel, J. et al.** (2012) 'Improving the success of radical innovation projects within established firms: engaging employees across different hierarchical levels', *Technology Analysis & Strategic Management*, 24(9), pp. 951–965.
12. **Sarkar, S., Osiyevskyy, O. and Clegg, S. R.** (2018) 'Incumbent capability enhancement in response to radical innovations', *European Management Journal*. Elsevier Ltd, 36(3), pp. 353–365.
13. **Kranz, J. J., Hanelt, A. and Kolbe, L. M.** (2016) 'Understanding the influence of absorptive capacity and ambidexterity on the process of business model change - the case of on-premise and cloud-computing software', *Information Systems Journal*, 26(5), pp. 477–517.
14. **Cowden, B. and Alhorr, H.** (2013) 'Disruptive innovation in multinational enterprises', *Multinational Business Review*, 21(4), pp. 358–371. doi: 10.1108/MBR-05-2013-0027.
15. **Kim, S. C. and Shin, M. S.** (2012) 'A new approach for overcoming innovator's dilemma: the catastrophe matrix of self-disruption', *Asian Journal of Technology Innovation*, 20(1), pp. 33–50

16. **Bohnsack, R. and Pinkse, J.** (2017) 'Value Propositions for Disruptive Technologies: Reconfiguration Tactics in the Case of Electric Vehicles', *California Management Review*, 59(4), pp. 79–96.
17. **Pérez, L., Dos Santos Paulino, V. and Cambra-Fierro, J.** (2017) 'Taking advantage of disruptive innovation through changes in value networks: insights from the space industry', *Supply Chain Management: An International Journal*, 22(2), pp. 97–106
18. **Heyden, M. L. M. et al.** (2012) 'Top Management Team Search and New Knowledge Creation', *International Studies of Management & Organization*, 42(4), pp. 27–51
19. **Hao, B. and Feng, Y.** (2016) 'How networks influence radical innovation: the effects of heterogeneity of network ties and crowding out', *Journal of Business and Industrial Marketing*, 31(6), pp. 758–770
20. **Kaltenecker, N., Hess, T. and Huesig, S.** (2015) 'Managing potentially disruptive innovations in software companies: Transforming from On-premises to the On-demand', *Journal of Strategic Information Systems*. Elsevier B.V., 24(4), pp. 234–250.
Sandström, C., Berglund, H. and Magnusson, M. (2014) 'Symmetric Assumptions in the Theory of Disruptive Innovation: Theoretical and Managerial Implications', *Creativity and Innovation Management*, 23(4), pp. 472–483.
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21. **Qi Dong, J., McCarthy, K. J. and Schoenmakers, W. W. M. E.** (2017) 'How Central Is Too Central? Organizing Interorganizational Collaboration Networks for Breakthrough Innovation', *Journal of Product Innovation Management*, 34(4), pp. 526–542.
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