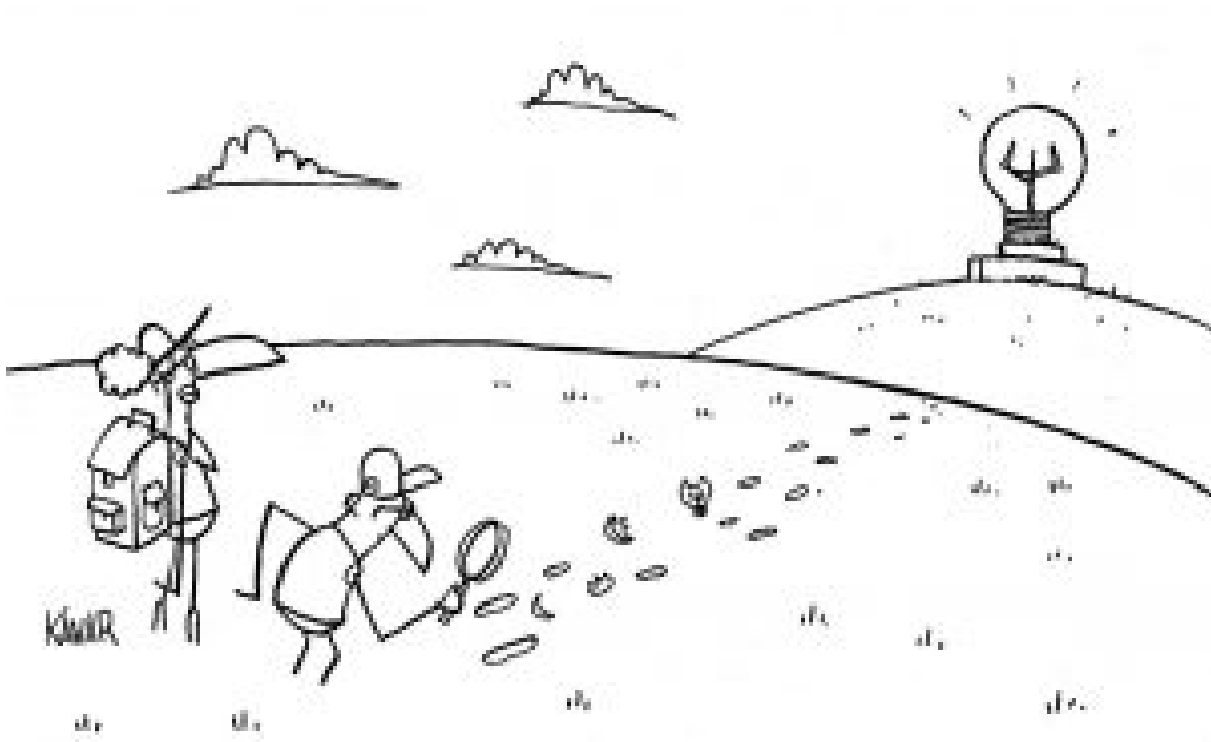
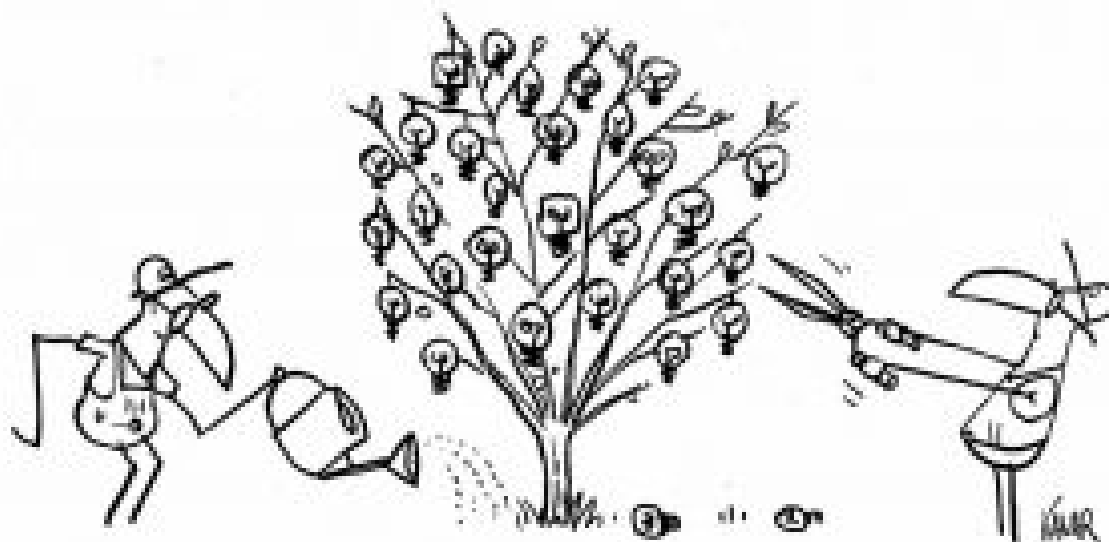


By Benoît Gailly, 17 January 2018

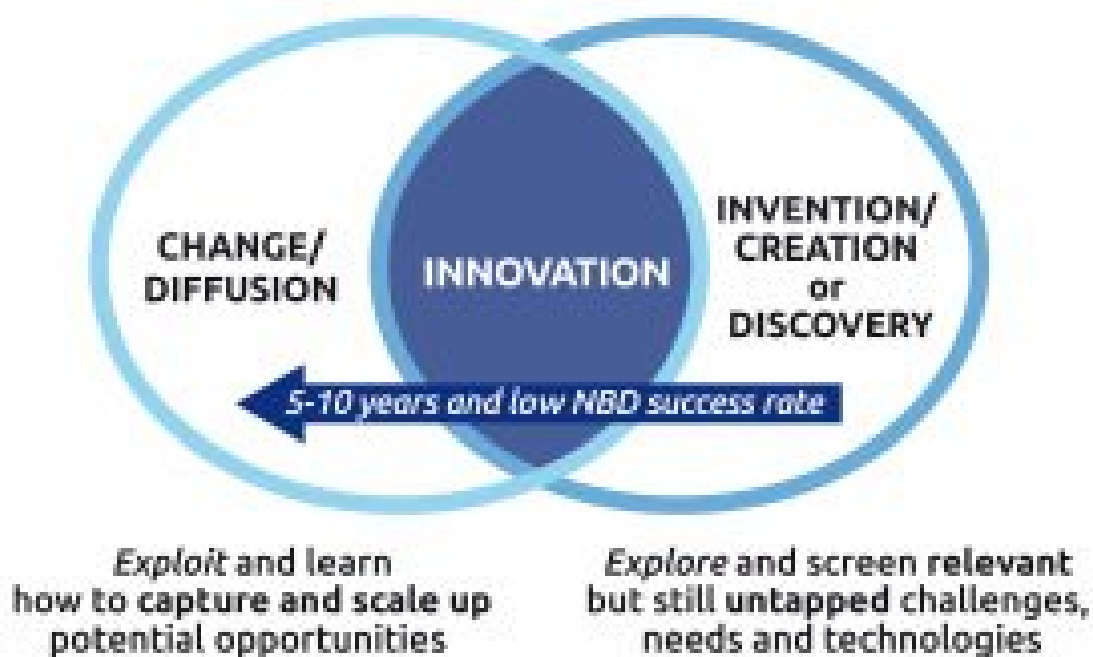
Lean development: speed and flexibility



Capturing innovation opportunities requires crafting **decision-making processes** and working in dual learning modes, with phases - or “stages” - of intensive and focused development and experimentation combined with moments - or “gates” - of questioning and prioritization.



Steering innovation projects and teams requires combining the discipline of focused project portfolio and clear management commitments with an environment that fosters leadership, risk-taking and experimentation.



Crossing the gap between a fuzzy innovation idea and sizeable value creation requires dedicated resources and capabilities, both to **explore** and frame selected potential opportunities and to

exploit and scale up potential new businesses. Innovation is real work, requiring significant and specific time and resources.

Bibliography

Learning while delivering: crafting the right decision process

Keywords: agile, flexibility, lean start-up, learning, management attention, prioritization, stage-gate

- (Book) Furr, N. R., & Dyer, J. (2014). [*The Innovator's Method: Bringing the Lean Startup Into Your Organization*](#). Harvard Business Press.
- (Book) Ries, Eric. [*The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*](#). Crown Business, 2011.
- (Video) [Implementing Stage-Gate® in the Real World](#); Sopheon
- (Video) [Innovation Process](#) by Kuczmarski Innovation (on Vimeo)
- (Video) [Agile working: an innovation in the way we work](#) | Anne Cantelo | TEDxWoking.
- (Video) [Lean Startup Meets Design Thinking](#)
- (Video) Steve Blank : [The principles of Lean](#)
- (Video) [The Innovator's Method: How Great Innovators Lead Differently](#) by Jeff Dyer and Nathan Furr; December 10, 2014.
- (Article) Amara, N., Landry, R., Becheikh, N., & Ouimet, M. (2008). Learning and novelty of innovation in established manufacturing SMEs. *Technovation*, 28(7), 450-463.
- (Article) Antons, D., Brettel, M., Hopp, C., Salge, T. O., Piller, F., & Wentzel, D. (2019). Stage-gate and agile development in the digital age: Promises, perils, and boundary conditions. *Journal of Business Research*, 110, 495-501.
- (Article) Blank, S. (2013). Why the lean start-up changes everything. *Harvard Business Review*, 91(5), 63-72.
- (Article) Bortolini, R. F., Cortimiglia, M. N., Danilevycz, A. D. M. F., & Ghezzi, A. (2018). Lean Startup: a comprehensive historical review. *Management Decision*.
- (Article) Camuffo, A., Cordova, A., Gambardella, A., & Spina, C. (2019). A scientific approach to entrepreneurial decision making: Evidence from a randomized control trial. *Management Science*.
- (Article) Chew, W. Bruce, Dorothy Leonard-Barton, and Roger E. Bohn. "Beating Murphy's law." MIT Sloan Management Review 32.3 (1991): 5.
- (Article) Cooper, R. G., & Kleinschmidt, E. J. (1986). An investigation into the new product process: steps, deficiencies, and impact. *Journal of Product Innovation Management*, 3(2), 71-85.
- (Article) Cooper, R. G. (1999). From experience: the invisible success factors in product innovation. *Journal of Product Innovation Management*, 16(2), 115-133.
- (Article) Cooper, R.G. (2014). What's Next?: After Stage-Gate. *Research-Technology Management*, 57(1), 20-31.
- (Article) Cooper, R.G., Edgett, S. J., & Kleinschmidt, E. J. (2002). Optimizing the stage-gate process: what best-practice companies do—I. *Research-Technology Management*, 45(5), 21-27.
- (Article) Cooper, R. G., & Edgett, S. J. (2008). Maximizing productivity in product

- innovation. *Research-Technology Management*, 51(2), 47-58.
- (Article) Cooper, R.G., & Sommer, A.F. (2016). The Agile-Stage-Gate Hybrid Model: A Promising New Approach and a New Research Opportunity. *Journal of Product Innovation Management*, 33(5), 513-526.
 - (Article) Covin, J. G., Garrett Jr, R. P., Gupta, J. P., Kuratko, D. F., & Shepherd, D. A. (2018). The interdependence of planning and learning among internal corporate ventures. *Entrepreneurship Theory and Practice*, 42(4), 537-570.
 - (Article) Denning, S. (2013). Why Agile can be a game change for managing continuous innovation in many industries. *Strategy & Leadership*, 41(2), 5 - 11.
 - (Article) Denning, S. (2017). The age of Agile. *Strategy & Leadership*, 45(1), 3-10.
 - (Article) Eisenhardt, K. M., & Tabrizi, B. N. (1995). Accelerating adaptive processes: Product innovation in the global computer industry. *Administrative Science Quarterly*, 40(1), 84-110.
 - (Article) Ettlie, J.E., & Elsenbach, J.M. (2007). Modified Stage-Gate® Regimes in New Product Development. *Journal of Product Innovation Management*, 24(1), 20-33.
 - (Article) Felin, T., Gambardella, A., Stern, S., & Zenger, T. (2019). Lean startup and the business model: Experimentation revisited. *Forthcoming in Long Range Planning (Open Access)*. <https://doi.org/10.1016/j.lrp.2019.06.002>
 - (Article) Frederiksen, D. L., & Brem, A. (2017). How do entrepreneurs think they create value? A scientific reflection of Eric Ries' Lean Startup approach. *International Entrepreneurship and Management Journal*, 13(1), 169-189.
 - (Article) Ghezzi, A. (2019). Digital startups and the adoption and implementation of Lean Startup Approaches: Effectuation, Bricolage and Opportunity Creation in practice. *Technological Forecasting and Social Change*, 146, 945-960.
 - (Article) Ghezzi, A., & Cavallo, A. (2020). Agile business model innovation in digital entrepreneurship: Lean startup approaches. *Journal of Business Research*, 110, 519-537.
 - (Article) Grönlund, J., Sjödin, D.R., & Frishammar, J. (2010). Open innovation and the stage-gate process: A revised model for new product development. *California Management Review*, 52(3), 106-131.
 - (Article) Hobday, M. (2005). Firm-level innovation models: perspectives on research in developed and developing countries. *Technology Analysis & Strategic Management*, 17(2), 121-146.
 - (Article) Hommels, A., Peters, P., & Bijker, W. E. (2007). Techno therapy or nurtured niches? Technology studies and the evaluation of radical innovations. *Research Policy*, 36(7), 1088-1099.
 - (Article) Knudsen, M.P., & Mortensen, T.B. (2011). Some immediate-but negative-effects of openness on product development performance. *Technovation*, 31(1), 54-64.
 - (Article) Krishnan, V., & Ulrich, K. T. (2001). Product development decisions: A review of the literature. *Management Science*, 47(1), 1-21.
 - (Article) Leonard-Barton, D. (1992). 'Core capabilities and core rigidities: a paradox in managing new product development'. *Strategic Management Journal*, 13, 111-125.
 - (Article) MacCormack, A., Verganti, R., & Iansiti, M. (2001). Developing products on "Internet time": The anatomy of a flexible development process. *Management Science*, 47(1), 133-150.
 - (Article) Meyer, M. H., & Marion, T. J. (2010). Innovating for effectiveness: Lessons from design firms. *Research-Technology Management*, 53(5), 21-28.

- (Article) Rigby, D. K., Sutherland, J., & Takeuchi, H. (2016). Embracing agile. *Harvard Business Review*, 94(5), 40-50.
- (Article) Robert, M.R. (2014). Agile at IBM: software developers teach a new dance step to management. *Strategy & Leadership*, 42(2), 26 - 29.
- (Article) Schot, J., & Geels, F. W. (2008). Strategic niche management and sustainable innovation journeys: theory, findings, research agenda, and policy. *Technology Analysis & Strategic Management*, 20(5), 537-554.
- (Article) Shepherd, D. A., & Gruber, M. (2020). The Lean Startup Framework: Closing the Academic-Practitioner Divide. *Entrepreneurship Theory and Practice*, 1042258719899415.
- (Article) Tidd, J., & Bodley, K. (2002). The influence of project novelty on the new product development process. *R&D Management*, 32(2), 127-138.
- (Article) Velu, C., & Stiles, P. (2013). Managing decision-making and cannibalization for parallel business models. *Long Range Planning*, 46(6), 443-458.
- (Article) Yli-Renko, H., Autio, E., & Sapienza, H. J. (2001). Social capital, knowledge acquisition, and knowledge exploitation in young technology-based firms. *Strategic Management Journal*, 22(6-7), 587-613.

Discipline and care: steering innovation projects and teams

Keywords: hypothesis-driven, not project management, portfolio monitoring, pressure

- (Book) Govindarajan, V., & Trimble, C. (2010). [The other side of innovation: Solving the execution challenge](#). Harvard Business Press.
- (Video) [Why Most Product Launches Fail](#), by Joan Schneider and Julie Hall (HBR)
- (Video) Prof. Rita McGrath, Columbia Business School (2013), [Five Ways to Ruin Your Innovation Process](#)
- (Article) Amabile, T.M., Hadley, C.N., & Kramer, S.J. (2002). Creativity under the gun. *Harvard Business Review*, 80, 52-63.
- (Article) Baer, M., & Oldham, G. R. (2006). The curvilinear relation between experienced creative time pressure and creativity: moderating effects of openness to experience and support for creativity. *Journal of Applied Psychology*, 91(4), 963.
- (Article) Benders, J., & Vermeulen, P. (2002). Too many tools? On problem solving in NPD projects. *International Journal of Innovation Management*, 6(02), 163-185.
- (Article) Bernstein, B., & Singh, P. J. (2006). An integrated innovation process model based on practices of Australian biotechnology firms. *Technovation*, 26(5-6), 561-572.
- (Article) Blank, S., & Newell, P. (2017). What your innovation process should look like. *Harvard Business Review*.
- (Article) Bonner, J.M., Ruekert, R.W., & Walker, O.C. (2002). Upper management control of new product development projects and project performance. *Journal of Product Innovation Management*, 19(3), 233-245.
- (Article) Bradley, S. W., Wiklund, J., & Shepherd, D. A. (2011). Swinging a double-edged sword: The effect of slack on entrepreneurial management and growth. *Journal of Business Venturing*, 26(5), 537-554.
- (Article) Brattström, A., Löfsten, H., & Richtnér, A. (2012). Creativity, trust and systematic processes in product development. *Research Policy*, 41(4), 743-755.
- (Article) Chen, Y.-C., Li, P.-C., & Lin, Y.-H. (2013). How inter- and intra-organisational

coordination affect product development performance: the role of slack resources. *Journal of Business & Industrial Marketing*, 28 (1-2), 125-136.

- (Article) Cooper, R. G. (1994). Third-generation new product processes. *Journal of Product Innovation Management*, 11(1), 3-14.
- (Article) Cooper, R. G. (2021). Accelerating innovation: some lessons from the pandemic. *Journal of Product Innovation Management*, 38(2), 221-232.
- (Article) D'Alvino, L., & Hidalgo, A. (2012). Innovation management techniques and development degree of innovation process in service organizations. *R&D Management*, 42(1), 60-70.
- (Article) Dooley, K. J., Subra, A., & Anderson, J. (2002). Adoption rates and patterns of best practices in new product development. *International Journal of Innovation Management*, 6(01), 85-103.
- (Article) Dougherty, D., Bertels, H., Chung, K., Dunne, D. D., & Kraemer, J. (2013). Whose time is it? Understanding clock-time pacing and event-time pacing in complex innovations. *Management and Organization Review*, 9(2), 233-263.
- (Article) Hill, L.A., & Davis, G. (2017). The Board's new innovation imperative. *Harvard Business Review*, 95(6), 103-109.
- (Article) Lewis, M. W. (2000). Exploring paradox: Toward a more comprehensive guide. *Academy of Management Review*, 25(4), 760-776.
- (Article) Markham, S. K., & Lee, H. (2013). Product development and management association's 2012 comparative performance assessment study. *Journal of Product Innovation Management*, 30(3), 408-429.
- (Article) Perlow, L.A., Okhuysen, G.A., & Repenning, N.P. (2002). The speed trap: Exploring the relationship between decision making and temporal context. *Academy of Management Journal*, 45(5), 931-955.
- (Article) Prajogo, D. I., & Sohal, A. S. (2001). TQM and innovation: a literature review and research framework. *Technovation*, 21(9), 539-558.
- (Article) Salomo, S., Weise, J., & Gemünden, H. G. (2007). NPD planning activities and innovation performance: the mediating role of process management and the moderating effect of product innovativeness. *Journal of Product Innovation Management*, 24(4), 285-302.
- (Article) Sethi, R., & Iqbal, Z. (2008). Stage-gate controls, learning failure, and adverse effect on novel new products. *Journal of Marketing*, 72(1), 118-134.
- (Article) Shin, J., & Grant, A. M. (2020). When putting work off pays off: the curvilinear relationship between procrastination and creativity. *Academy of Management Journal*, (ja).
- (Article) Smith, P. G., & Reinertsen, D. G. (1992). Shortening the product development cycle. *Research-Technology Management*, 35(3), 44-49.
- (Article) Troilo, G., De Luca, L.M., & Atuahene-Gima, K. (2014). More innovation with less? A strategic contingency view of slack resources, information search, and radical innovation. *Journal of Product Innovation Management*, 31(2), 259-277.

From fuzzy front end to value creation: crossing the gap

Keywords: *assessment, front-end, gates, incubation, new product development, screening*

- (Book) Hill, Susan A., and Stylianos Georgoulas. [Handbook of Research on Corporate](#)

[Entrepreneurship](#) (2016)

- (Book) O'Reilly III, C. A., & Tushman, M. L. (2016). [Lead and disrupt: How to solve the innovator's dilemma](#). Stanford University Press.
- (Book) Roberts, Michael J., Howard H. Stevenson, William A. Sahlman, Paul Marshall and Richard G. Hamermesh, eds. [New Business Ventures and the Entrepreneur](#). 6th ed. New York: McGraw-Hill/Irwin, 2006.
- (Video) [Allocating Resources for Innovation](#) by Kuczmarski Innovation (on Vimeo)
- (Article) Adams, D., & Hublikar, S. (2010). Upgrade your new-product machine. *Research-Technology Management*, 53(2), 55-67.
- (Article) Barczak, G., Griffin, A., & Kahn, K. B. (2009). Perspective: trends and drivers of success in NPD practices: results of the 2003 PDMA best practices study. *Journal of Product Innovation Management*, 26(1), 3-23.
- (Article) Biniari, M.G., Simmons, S.A., Monsen, E.W., & Moreno, M.P. (2015). The configuration of corporate venturing logics: An integrated resource dependence and institutional perspective. *Small Business Economics*, 45(2), 351-367.
- (Article) Breuer, H. (2013). Lean venturing: Learning to create new business through exploration, elaboration, evaluation, experimentation, and evolution. *International Journal of Innovation Management*, 17(03), 1340013.
- (Article) Burgelman, Robert A. "A process model of internal corporate venturing in the diversified major firm." *Administrative Science Quarterly* (1983): 223-244.
- (Article) Cankurtaran, P., Langerak, F., & Griffin, A. (2013). Consequences of new product development speed: A meta-analysis. *Journal of Product Innovation Management*, 30(3), 465-486.
- (Article) Cooper, R. G. (2008). The stage-gate idea-to-launch process-update, what's new and NexGen systems. *Journal of Product Innovation Management*, 25(3), 213-232.
- (Article) De Brentani, U., & Reid, S. E. (2012). The fuzzy front-end of discontinuous innovation: Insights for research and management. *Journal of Product Innovation Management*, 29(1), 70-87.
- (Article) Froehle, C. M., & Roth, A. V. (2007). A resource-process framework of new service development. *Production and Operations Management*, 16(2), 169-188.
- (Article) Griffin, A., & Hauser, J. R. (1996). Integrating R&D and marketing: A review and analysis of the literature. *Journal of Product Innovation Management: An International Publication of the Product Development & Management Association*, 13(3), 191-215.
- (Article) Joh, J., & Mayfield, M. (2009). The discipline of product discovery: identifying breakthrough business opportunities. *Journal of Business Strategy*, 30(2/3), 70-77.
- (Article) Khilji, S. E., Mroczkowski, T., & Bernstein, B. (2006). From invention to innovation: toward developing an integrated innovation model for biotech firms. *Journal of product innovation management*, 23(6), 528-540.
- (Article) Khurana, A. & Rosenthal, S.R. (1997). Integrating the Fuzzy Front-End of New Product Development. *Sloan Management Review*, 38 (2), 103-120.
- (Article) Khurana, A., & Rosenthal, S. R. (1998). Towards holistic "front ends" in new product development. *Journal of Product Innovation Management* 15(1), 57-74.
- (Article) Kim, J., & Wilemon, D. (2002). Focusing the fuzzy front-end in new product development. *R&D Management*, 32(4), 269-279.
- (Article) Koen, P., Ajamian, G., Burkart, R., Clamen, A., Davidson, J., D'Amore, R., ... & Karol, R. (2001). Providing clarity and a common language to the "fuzzy front end".

Research-Technology Management, 44(2), 46-55.

- (Article) Mansoori, Y., & Lackéus, M. (2019). Comparing effectuation to discovery-driven planning, prescriptive entrepreneurship, business planning, lean startup, and design thinking. *Small Business Economics*, 1-28.
- (Article) Markham, S. K., Ward, S. J., Aiman-Smith, L., & Kingon, A. I. (2010). The valley of death as context for role theory in product innovation. *Journal of Product Innovation Management*, 27(3), 402-417.
- (Article) Markham, S. K. (2013). The impact of front-end innovation activities on product performance. *Journal of Product Innovation Management*, 30, 77-92.
- (Article) Markovitch, D. G., O'Connor, G. C., & Harper, P. J. (2017). Beyond invention: the additive impact of incubation capabilities to firm value. *R&D Management*, 47(3), 352-367.
- (Article) Meyer, M. H., & Utterback, J. M. (1995). Product development cycle time and commercial success. *IEEE transactions on engineering management*, 42(4), 297-304.
- (Article) O'Connor, G.C., & Rice, M.P. (2013). New market creation for breakthrough innovations: Enabling and constraining mechanisms. *Journal of Product Innovation Management*, 30(2), 209-227.
- (Article) Rice, M., Kelley, D., Peters, L., & Colarelli O'Connor, G. (2001). Radical innovation: triggering initiation of opportunity recognition and evaluation. *R&D Management*, 31(4), 409-420.
- (Article) Sosna, M., Trevinyo-Rodríguez, R. N., & Velamuri, S. R. (2010). Business model innovation through trial-and-error learning: The Naturhouse case. *Long Range Planning*, 43(2-3), 383-407.
- (Article) Yang, X., Sun, S. L., & Zhao, X. (2018). Search and execution: examining the entrepreneurial cognitions behind the lean startup model. *Small Business Economics*, 1-13

(c) Prof. Benoit Gailly, Louvain School of Management