

EXPERT INSIGHT

Building Analytics Teams

Harnessing analytics and artificial intelligence for business improvement

Foreword by:

Douglas B. Laney

Principal, Data & Analytics Strategy, Caserta



John K. Thompson

Packt>

Chapter 1

References

1. Will robots steal our jobs?, August 20, 2019, Mike Colagrossi, <https://www.weforum.org/agenda/2019/08/the-robots-are-coming-but-take-a-breath>
2. Polanyi's Paradox, https://en.wikipedia.org/wiki/Polanyi%E2%80%99s_paradox
3. Rob May's thoughts on startups, angel investing, and becoming a venture capitalist, <http://coconutheadsets.com/>
4. Gartner Says By 2020, Artificial Intelligence Will Create More Jobs Than It Eliminates, December 13, 2017, Rob van der Meulen & Christy Pettey, <https://www.gartner.com/en/newsroom/press-releases/2017-12-13-gartner-says-by-2020-artificial-intelligence-will-create-more-jobs-than-it-eliminates>
5. Robots aren't stealing all our jobs, says the World Bank's chief economist, January 11, 2019, Sean Fleming, <https://www.weforum.org/agenda/2019/01/robots-aren-t-wiping-out-jobs-yet-according-to-the-world-bank-s-chief-economist/>
6. You Probably Need a College Degree to Get a Factory Job Now, December 10, 2019, Kaitlin Mulhere, <https://money.com/manufacturing-jobs-college-degree/>
7. Analytics: How to Win With Intelligence, January 7, 2017, John K Thompson & Shawn Rogers, <https://www.packtpub.com/data/analytics-how-to-win-with-intelligence>
8. WTF?: What's the Future and Why It's Up to Us, October 10, 2017, Tim O'Reilly, <https://www.amazon.com/WTF-Whats-Future-Why-Its/dp/0062565710>
9. Augmented Intelligence: The Business Power of Human–Machine Collaboration 1st Edition, November 1, 2019, Judith Hurwitz, Henry Morris, Candace Sidner, Daniel Kirsch, https://www.amazon.com/Augmented-Intelligence-Business-Human-Machine-Collaboration-dp-0367184893/dp/0367184893/ref=mt_hardcover?_encoding=UTF8&me=&qid=
10. How many software developers are in the US and in the world in 2019?, December 27, 2019, <https://www.daxx.com/blog/development-trends/number-software-developers-world>
11. Ferris State University, Course Catalog, <http://catalog.ferris.edu/programs>
12. The Impact of Artificial Intelligence on the Labor Market, Michael Webb, Stanford University, November 2019, https://web.stanford.edu/~mww/webb_jmp.pdf

13. Programming for Everybody (Getting Started with Python), University of Michigan, Coursera, <https://www.coursera.org/learn/python>, Dr. Charles Russell Severance, <https://www.coursera.org/instructor/drchuck> and <https://www.dr-chuck.com/>

Chapter 2

Images

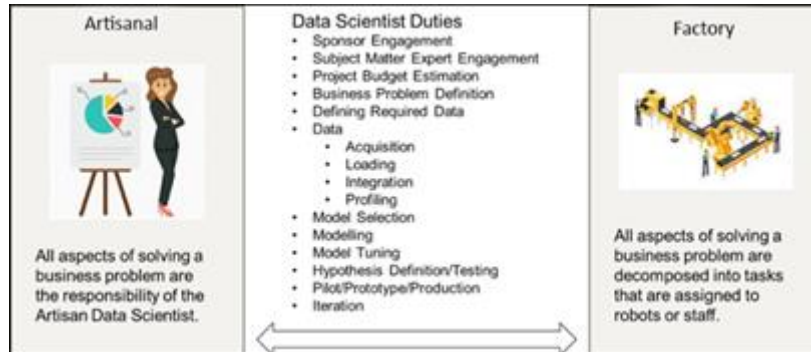


Figure 2.1: Artisanal and Factory team structure comparison

References

1. Dell Autism Hiring Program, Dell website, January 3, 2020, <https://jobs.dell.com/neurodiversity>
2. Why Dell Is Making Neurodiverse Hiring A Priority, October 16, 2019, Danielle Hughes, <https://www.catalyst.org/2019/10/16/why-dell-is-making-neurodiverse-hiring-a-priority>
3. In a Tight Labor Market, a Disability May Not Be a Barrier, September 5, 2019, Ben Casselman, <https://www.nytimes.com/2019/09/05/business/economy/recruiting-labor-force.html>
4. Novartis CEO Steers Drug Maker Back to R&D, February 2018, Wall Street Journal, <https://www.wsj.com/articles/novartis-ceo-steers-drug-maker-back-to-r-d-1518962400>
5. 8 AI trends we're watching in 2020, January 7, 2020, Roger Magoulas, O'Reilly Artificial Intelligence Newsletter, <https://www.oreilly.com/radar/8-ai-trends-were-watching-in-2020/>
6. Smarter with Gartner, Gartner Keynote: Do you Speak Data?, March 5, 2018, Christy Pettey, <https://www.gartner.com/smarterwithgartner/gartner-keynote-do-you-speak-data/>

Chapter 3

References

1. A good programmer can be as 10X times more productive than a mediocre one, December 2013, multiple authors and contributors, <https://softwareengineering.stackexchange.com/questions/179616/a-good-programmer-can-be-as-10x-times-more-productive-than-a-mediocre-one>
2. The Scorpion and the Frog, https://en.wikipedia.org/wiki/The_Scorpion_and_the_Frog

Chapter 4

References

1. Manager and machine: The new leadership equation, McKinsey Quarterly, September 2014, By Martin Dewhurst and Paul Willmott <https://www.mckinsey.com/featured-insights/leadership/manager-and-machine?cid=other-eml-cls-mip-mck&hlkid=0b00d5ae4c264dd0821632a30c90eb75&hctky=2020931&hdpid=5de210fe-6adc-4201-9d10-1e5f9c04e8ef>
2. Peter Drucker, The manager and the moron, McKinsey Quarterly, 1967
3. Augmented Intelligence: The Business Power of Human–Machine Collaboration First Edition, by Judith Hurwitz, Henry Morris, Candace Sidner, and Daniel Kirsch, <https://www.amazon.com/Augmented-Intelligence-Business-Human-Machine-Collaboration/dp/0367184893>
4. Curiosity killed the cat, <https://www.phrases.org.uk/meanings/curiosity-killed-the-cat.html>
5. The Neuroscience of Everybody's Favorite Topic, Why do people spend so much time talking about themselves?, Adrian F. Ward, July 16, 2013, Scientific American, <https://www.scientificamerican.com/article/the-neuroscience-of-everybody-favorite-topic-themselves/>
6. Culture Eats Strategy for Breakfast, <https://quoteinvestigator.com/2017/05/23/culture-eats/>
7. On or about November 11, 2019, I posted the following question on LinkedIn, "I am curious about Chief Analytics Officer roles..." https://www.linkedin.com/posts/johnkthompson_i-am-curious-about-chief-analytics-officer-activity-6605458399830298624-lAc1

Chapter 5

References

1. The House of Medici [English: /ˈmɛdɪtʃi/ MED-i-chee or British English (UK): /məˈdiːtʃi/ mə-DEE-chee (<https://en.wikipedia.org/wiki/Help:IPA/English>), Italian: [ˈmɛːditʃi] (<https://en.wikipedia.org/wiki/Help:IPA/Italian>)] was an Italian banking family (https://en.wikipedia.org/wiki/List_of_banking_families) and political dynasty (https://en.wikipedia.org/wiki/Dynasty#Political_families_in_Republics) that first began to gather prominence under Cosimo de' Medici (https://en.wikipedia.org/wiki/Cosimo_de%27_Medici) in the Republic of Florence (https://en.wikipedia.org/wiki/Republic_of_Florence) during the first half of the 15th century. https://en.wikipedia.org/wiki/House_of_Medici
2. Global AI Survey: AI proves its worth, but few scale impact, November 2019, McKinsey, The survey content and analysis were developed by Arif Cam, a consultant in McKinsey's Silicon Valley office; Michael Chui, a partner of the McKinsey Global Institute and a partner in the San Francisco office; and Bryce Hall, an associate partner in the Washington, DC, office. <https://www.mckinsey.com/featured-insights/artificial-intelligence/global-ai-survey-ai-proves-its-worth-but-few-scale-impact>
3. Artificial intelligence: Why a digital base is critical, July 2018, McKinsey Quarterly, Jacques Bughin is a director of the McKinsey Global Institute and a senior partner in McKinsey's Brussels office; Nicolas van Zeebroeck is a professor at the Solvay Brussels School of Economics and Management, Université libre de Bruxelles. <https://www.mckinsey.com/business-functions/mckinsey-analytics/our-insights/artificial-intelligence-why-a-digital-base-is-critical>
4. Novartis/Microsoft establish an AI lab for joint collaboration, October 1, 2019, Vas Narasimhan, chief executive officer of Novartis AG, https://www.instagram.com/tv/B3FFzCNg808/?utm_source=ig_embed
5. If I Had More Time, I Would Have Written a Shorter Letter, Blaise Pascal, "Lettres Provinciales", 1657, <https://quoteinvestigator.com/2012/04/28/shorter-letter/>
6. Gordian Knot, https://en.wikipedia.org/wiki/Gordian_Knot

Chapter 6

References

1. Analytics and AI-driven enterprises thrive in the Age of With. The culture catalyst, July 25, 2019, Thomas H. Davenport, Jim Guszcza, Tim Smith, and Ben Stiller, <https://www2.deloitte.com/us/en/insights/topics/analytics/insight-driven-organization.html>
2. Augmented Intelligence: The Business Power of Human–Machine Collaboration 1st Edition, November 1, 2019, Judith Hurwitz, Henry Morris, Candace Sidner, Daniel Kirsch, <https://www.amazon.com/dp/0367184893/>
3. University of Iowa Hospitals and Clinics Transforms the O.R. Accessible, predictive analytics results in 74% reduction in surgical infections. <https://www.tibco.com/customers/university-iowa-hospitals-and-clinics>
4. What Separates Analytical Leaders from Everyone Else. <https://www.thelowdownblog.com/2020/02/what-separates-analytical-leaders-from.html>
5. What Separates Analytical Leaders From Laggards?, February 3, 2020, Thomas H. Davenport, Nitin Mittal, and Irfan Saif, <https://sloanreview.mit.edu/article/what-separates-analytical-leaders-from-laggards/>
6. INFORMS Analytics Body of Knowledge (Wiley Series in Operations Research and Management Science) 1st Edition, James J. Cochran (Editor), Thomas H. Davenport, <https://www.amazon.com/dp/1119483212>

Chapter 8

Images

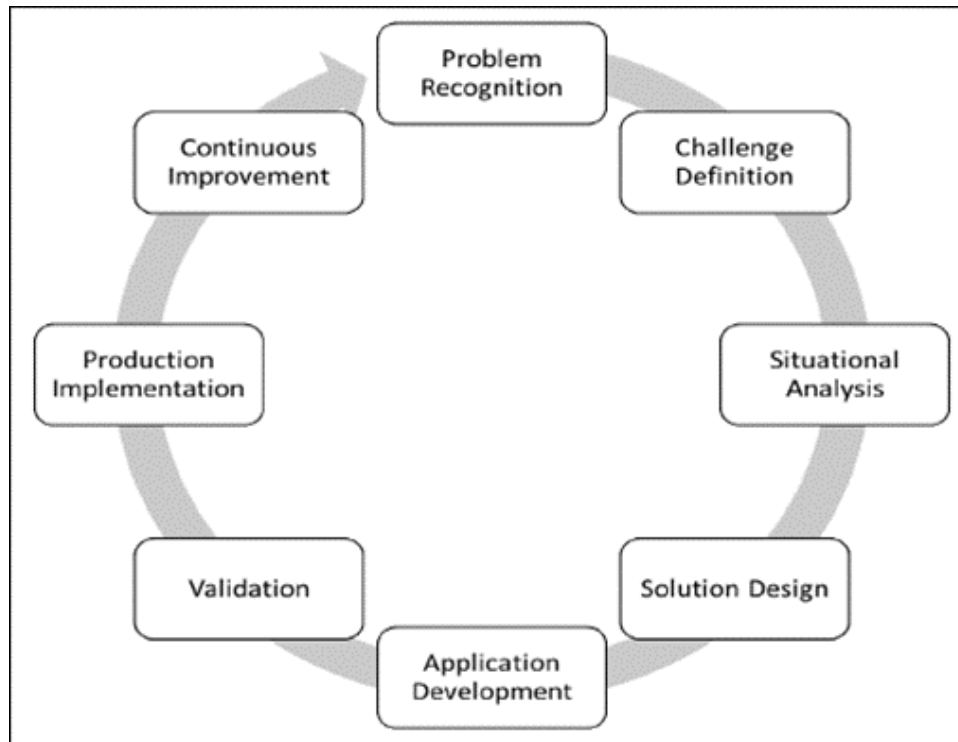


Figure 8.1: A comprehensive view of the change management process

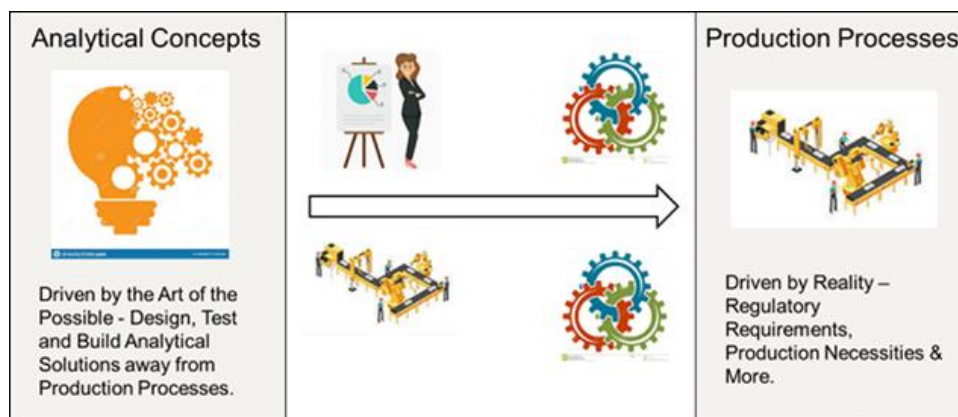


Figure 8.2: Analytical concepts and production systems

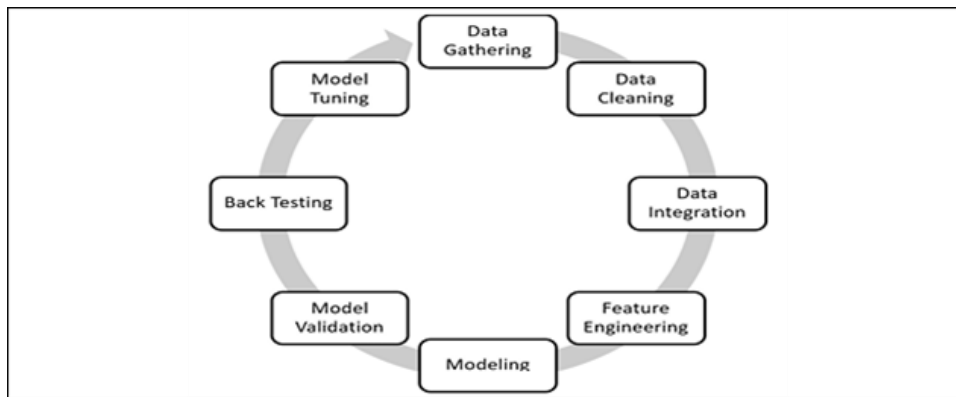


Figure 8.3: The analytics cycle

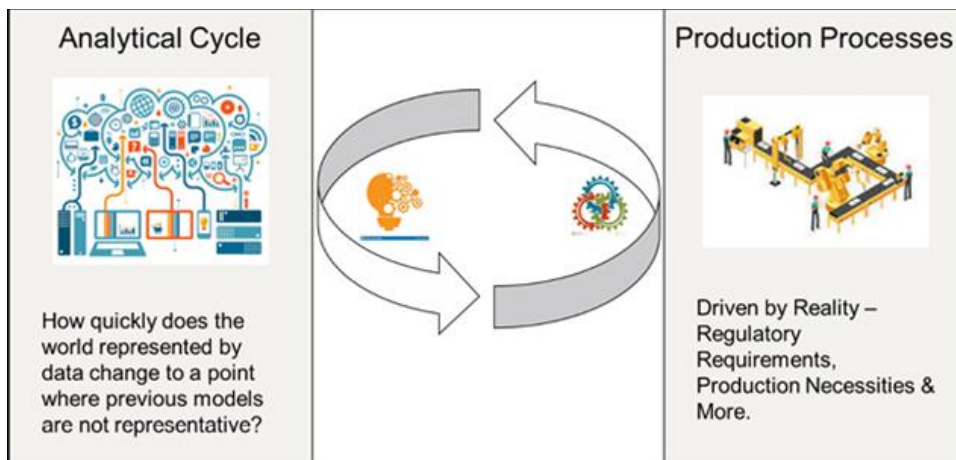


Figure 8.4: Analytical and production cycle

Chapter 9

Images

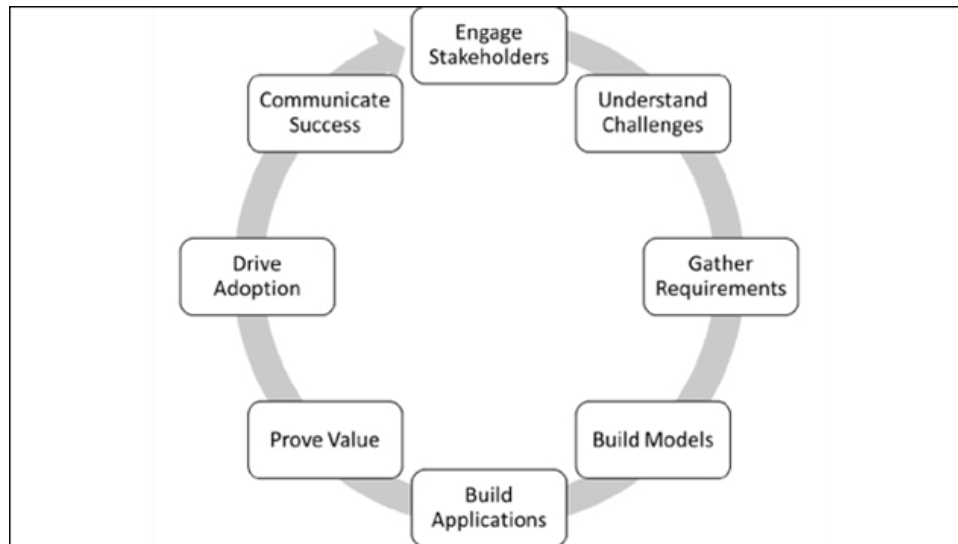


Figure 9.1: Stakeholder engagement cycle/process

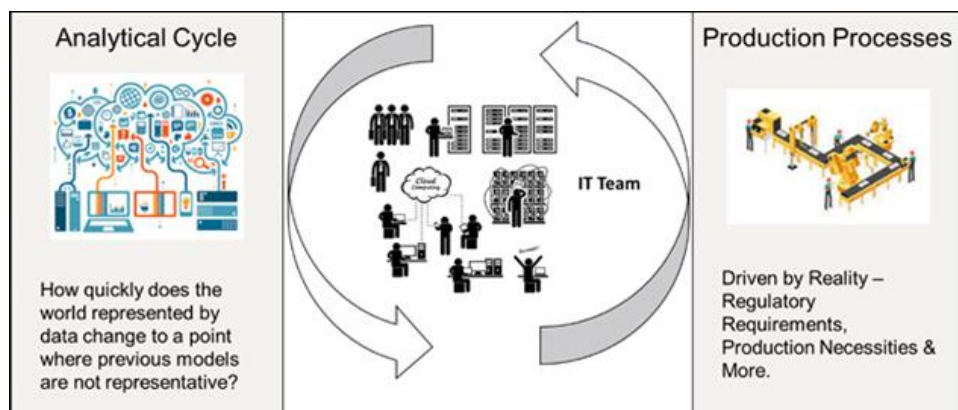


Figure 9.2: Analytical and production cycles with IT involvement

Chapter 10

Images

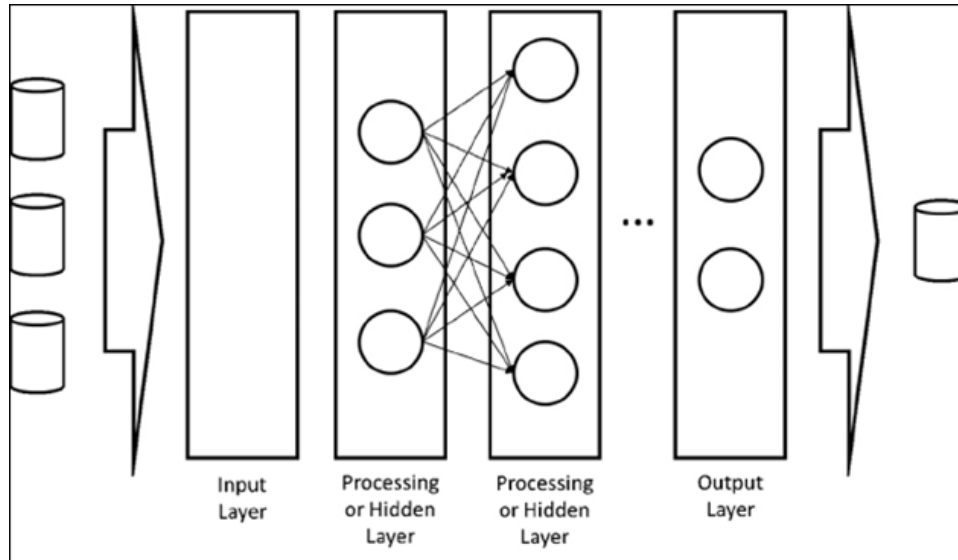


Figure 10.1: A conceptual neural network architecture

References

1. FIRSTL, <https://www.firstinspires.org/>
2. 9 Things You May Not Know About the Ancient Sumerians, Evan Andrews, Updated: Feb 5, 2019, Original: Dec 16, 2015: <https://www.history.com/news/9-things-you-may-not-know-about-the-ancient-sumerians>
3. How Much Data Do We Create Every Day? The Mind-Blowing Stats Everyone Should Read, Bernard Marr, May 21, 2018: <https://www.forbes.com/sites/bernardmarr/2018/05/21/how-much-data-do-we-create-every-day-the-mind-blowing-stats-everyone-should-read/#598b0a1e60ba>
4. Infonomics: How to Monetize, Manage, and Measure Information as an Asset for Competitive Advantage, 1st Edition: <https://www.amazon.com/Infonomics-Monetize-Information-Competitive-Advantage/dp/1138090387>
5. King Mu of Zhou: https://en.wikipedia.org/wiki/King_Mu_of_Zhou
6. Solid, <https://solid.mit.edu/>
7. Dartmouth workshop: https://en.wikipedia.org/wiki/Dartmouth_workshop
8. (Solomonoff, R.J., The Time Scale of Artificial Intelligence; Reflections on Social Effects, Human Systems Management, Vol 5 1985, Pp 149-153, Moor, J., The Dartmouth College

Artificial Intelligence Conference: The Next Fifty years, AI Magazine, Vol 27, No., 4, Pp. 87-9, 2006, Kline, Ronald R., Cybernetics, Automata Studies and the Dartmouth Conference on Artificial Intelligence, IEEE Annals of the History of Computing, October–December, 2011, IEEE Computer Society)

9. Rebooting AI, Gary Marcus and Ernest Davis:
<https://www.penguinrandomhouse.com/books/603982/rebooting-ai-by-gary-marcus-and-ernest-davis/>
10. The Future of AI Will Be About Less Data, Not More, H. James Wilson, Paul R. Daugherty and Chase Davenport, January 14, 2019: <https://hbr.org/2019/01/the-future-of-ai-will-be-about-less-data-not-more>
11. Quantum computing, https://en.wikipedia.org/wiki/Quantum_computing
12. Quantum Supremacy Using a Programmable Superconducting Processor, John Martinis, Chief Scientist Quantum Hardware and Sergio Boixo, Chief Scientist Quantum Computing Theory, Google AI Quantum, Wednesday, October 23, 2019:
<https://ai.googleblog.com/2019/10/quantum-supremacy-using-programmable.html>
13. Why Google's Quantum Supremacy Milestone Matters, Dr. Scott Aaronson, Founding director of the Quantum Information Center at the University of Texas at Austin, October 30, 2019: <https://www.nytimes.com/2019/10/30/opinion/google-quantum-computer-sycamore.html>