LEADERSHIP CHALLENGES WITH BIG DATA & ANALYTICS
EIGHT-DAY PROGRAMME
Artificial Intelligence will without any doubt change the way we will do business in future. As a matter of fact, it is already changing many businesses that we are involved in today. But what is needed to make Artificial Intelligence a valuable part of the way we do business ourselves? Many experts believe that successful Artificial Intelligence applications hinge on the so-called b-smart technologies (Blockchain, Social media, Mobile use, Analytics, Cloud and Things-on-the-internet or better known as IoT). The fuelling component of those technologies is Big Data. This insight will require a whole new set of business skills. Understanding and working with new technologies for big data collection, analysis and prediction will not create only huge opportunities for business, but also ethical, legal, privacy and technical issues concerning every part of the organisation. It will influence customer relationships, redefines how firms develop new products and services, changes how operations are organised and managed, improves demand and supply networks, and provides the basis for new business models. It will demand a data driven focus of everyone involved.

Organisations transforming towards becoming data-driven are guided and supported by the eight-day Leadership Challenges with Big Data programme from RSM Executive Education. It connects company teams consisting of professionals in technical- and methodology-oriented data science and professionals engaged in business (analytics), links them to best business practices and it actively involves senior executives. This programme has been developed and organised by the Erasmus Centre for Analytics with partners from industry.

WHO IS IT FOR?
Company teams from data-intense industries with one or more data scientists and one or more business analysts working with business models and applications, as well as senior executives and supervisors. Professionals in non-profit organisations and governments, particularly those who work on smart city concepts, may also benefit.

EXCLUSIVITY
We guarantee a collaborative atmosphere during the programme so ideas can be freely shared and discussed among professionals from a range of industries. Places are allocated on a first-come, first-served basis. If several companies from one industry want to participate, they can reserve places in a next series. It’s not possible to accommodate requests from consultancy firms for exclusive access.

LEARNING OBJECTIVES
The learning objectives of the programme are:

► to provide professionals engaged in data science and business analytics with academically sound and new ways to apply big data technologies in order to design and implement innovative and successful business applications
► to improve the business skills of technically focused data scientists by exploring business thinking, business-case creation, and investigating problems from a business angle
► to increase collaboration between data scientists and business analysts by increasing mutual understanding
► to provide a cross-industry learning platform for professionals to learn from experiences in other relevant industries
► to broaden data scientists’ and business analysts’ understanding of privacy and security in order to provide solid data-driven and GDPR compliant business applications
► to engage participants with senior executives and supervisors to facilitate implementation of business applications.

BLENDED LEARNING FORMAT
The programme format uses blended learning: a mixture of conventional lectures, lessons and tutorials combined with online presentations and sessions. Learning materials from Erasmus University Rotterdam and other universities will be available after the programme. These include short courses and tutorials that will ensure everyone benefits from having a common set of capabilities. The e-learning environment facilitates collaboration and online meetings between participants and faculty.

TEAM COACHING
The key is a holistic approach by participation in multi-disciplinary and multi-hierarchical teams, learning-by-doing from peers working in various industries. Every company team is assigned 2 coaches during the programme: a faculty member and a business expert. The coaches help the team to work on their assignment and apply concepts taught during the programme to their own case.

“Exploiting big data requires a fundamental rethink of how we do business.”

Prof. Eric van Heck
PROGRAMME DESIGN

**BLOCK 1**

**Introduction and preparation session**

Two days of preparation sessions, during which each participating company is expected to bring at least one case study to which the teams can apply the concepts they have learned. During this part of the programme, you will focus on the strategic importance of data-driven organisations, terminology, leadership challenges and readiness of companies, including their enterprise architecture and digitised platform. It includes case studies from other companies and short presentations from participating companies. This block will take place on 20 and 21 September 2018, followed by a one week period from 1 until 4 October 2018 in which individual team coaching sessions, either face-to-face or on-line will be scheduled to discuss the status of their Use Cases.

**BLOCK 2 AND 3**

**Core programme**

Block two is a two day session including one evening session, during which you explore the basic technology challenges of a data-driven company; technologies for analysis, artificial intelligence, machine learning, prediction and visualisation. The evening session will focus on the company use case, consulting with both academic- and business coaches. Block two will take place on 10 and 11 October 2018, followed by a two week period from 22 until 31 October 2018 in which individual team coaching sessions, either face-to-face or on-line will be scheduled to discuss the status of their Use Cases.

Block three is a two day session including one evening session, during which you explore the different aspects of a data driven company, such as digital marketing, multichannel analytics, fintech, data privacy, data security and data ethics. Block three will take place on 14 and 15 November 2018 followed by a two week period from 10 until 20 December 2018 in which individual team coaching sessions will be scheduled.

**BLOCK 4**

**Final session**

Two days for fine tuning the gained knowledge and turn it into applicable wisdom. Discuss challenges you have experienced in transforming your business and the implementation of your proposals. In the afternoon of the second day each team’s case study results will be presented to an expert panel and discussed in the class. This block will take place on 17 and 18 January 2019. Participating company teams may be accompanied by their executive sponsor or board member during day two of Block 4.
Faculty members of RSM create impeccable academic credentials with a thorough knowledge of business practice. Selected for their ability and experience in executive teaching, they will draw on their research and knowledge to deliver a unique learning experience.

**DR JAN VAN DALEN**
is associate professor of statistics at RSM. He is the co-founder of the recently established Erasmus Centre for Data Science and Business Analytics, and co-director of E-Urban, and leads the Urban Big Data knowledge lab in collaboration with the City of Rotterdam. His main research interests are in quantitative analysis of information, logistics, trade and organisational processes, and he has been involved in research programmes that include monitoring trade and traffic flows with CBS, trade lane risk assessment in Cassandra, and cross-chain collaboration in 4C4More/Dinalog. He has extensive teaching experience in applied statistics, forecasting and big data in bachelor, master and executive teaching programmes.

**PROF. ERIC VAN HECK**
is a professor of information management and markets at RSM. His research concentrates on the role and impact of advanced information systems and technologies helping to solve complex societal and business challenges. He is working on sustainable ways of working, multi-agent systems for smart energy grids, mobile banking platform ecosystems for financial inclusion, and sustainable maritime logistical systems. His research is carried out with innovative companies and universities in Brazil, China, Europe, Indonesia, and the USA.

**PROF. TING LI**
is a Professor of Information Systems and the Academic Director of MSc Business Information Management at Rotterdam School of Management (RSM), Erasmus University. She is the founding member of the Erasmus Centre for Data Science and Business Analytics. Ting Li is an expert in Digital Strategy, Ecommerce, Social Media Analytics, Mobile Marketing, Business Analytics, Online Advertising, and Pricing and Revenue Management. She has consulted and worked in various capacities with Shell, KPMG, PwC, Accenture, Coolblue, Wehkamp, Zelf, Tweakers, Shop2Market, Dutch Railways, RET, amongst others.

**DR JASON ROOS**
is an assistant professor in the Department of Marketing Management at RSM. His research focuses on the way users and marketers engage with new media and has been published in top academic journals. Before entering academia, he worked as a consultant and software engineer in Seattle, USA, and was managing director of an internet marketing and software firm. He earned his PhD in marketing from Duke University's Fuqua School of Business, and received the prestigious INFORMS Society for Marketing Science Dissertation Award in 2011.

**PROF. PETER VERVEST**
is professor of information management and networks at RSM who says big data is automated decision-making combining big amounts of distributed, often poorly aligned and non-authenticated data from many sources. He sees the Internet of Things as presenting a set of technological, business and societal challenges. Peter’s contribution to the development and creation of open information systems dates back to the publication of *Electronic Mail and Message Handling* in 1985, a landmark publication for developing global communications networks such as the internet and a focus on smart networks resulted in the publication of *Smart Business Networks* in 2005 and *The Network Experience* in 2009. He has conducted research for large firms and the EU, and is also chairman of the complexity studies programme of the Netherlands Organisation for Scientific Research.
GUEST SPEAKERS
The programme is presented by a mix of academia and business practitioners. Previous editions of the programme have featured guest speakers from PA consulting, Leiden University / faculty of Law, Dutch energy grid firm Alliander, online travel firm Booking.com, Dutch online retailer Coolblue, computer software provider SAS, e-commerce software firm Shopify, Amazon web services, CGI and DAIN Studios.

“GUEST SPEAKERS”

“I was very impressed by the quality of the programme, the business expertise of Erasmus Faculty and the industry experts.”
Jildert Huitema, Stafmanager Marketing & Market Intelligence
Randstad Groep Nederland bv

“COLLABORATIVE PARTNERSHIPS”

“COLLABORATIVE PARTNERSHIPS”

“Quint supports enterprises in designing and operationalizing their digital transformation. Together we develop a strategy that can be adapted quickly and effectively in anticipation of – or in response to – opportunities or threats.”

Quint

“Leiden Law School is one of the largest faculties at Leiden University. The faculty is renowned for its research and teaching which covers the full breadth of law and goes far beyond the national boundaries. With its international focus and roots going far back in the Dutch legal order, the faculty has helped to train many generations of legal professionals for key positions within a society governed by the rule of law.”

Leiden Law School

“Delft University of Technology’s mission is to make a significant contribution towards a sustainable society for the twenty-first century by conducting groundbreaking scientific and technological research which is acknowledged as world-class, by training scientists and engineers with a genuine commitment to society and by helping to translate knowledge into technological innovations and activity with both economic and social value.”

Delft University of Technology

“Previous participants
Previous participants have included teams from several countries, different industries and companies (such as Alliander, Canon, DP World Dubai, DSM, Enexis, Esa, Essent, Hotel Reservation Service Germany, ING, KPN, Lufthansa, PA Consulting, Randstad, Sanoma, and Stedin).”

“Previous participants”

“One of the most important features of this programme is the cross industry setup. It opens your world to think about other applications and to discuss common challenges and share best practices.”
Taco Wiersma, business information manager, DSM
INTRODUCTION AND PREPARATION SESSION

One-and-a-half days of preparation sessions, during which each participating company is expected to bring at least one case study to which the teams can apply the concepts they have learned. During this part of the programme, you will focus on the strategic importance of data-driven organisations, terminology, leadership challenges and readiness of companies, including their enterprise architecture and digitised platform. It includes case studies from other companies and short presentations from participating companies.

Module 1: Introduction to the leadership challenges of big data
- Welcome participants
- The era of big data
- Leadership in the digital age
- Challenges for data-driven companies
- Elevator pitches: Teams present their company specific Use Cases

Module 2: Digital masters and big data (part 1)
- Overview of emerging technologies
- Building digital and leadership capabilities
- Myths and realities of digital transformation
- Expert Lecture on Best practice for digital masters and big data

Evening
Executive Partnership dinner with guest speaker

Module 3: Introduction to Use Case Development

Module 4: Digital masters and big data (part 2)
- Assignment about Smart connected products and services with big data
- Value of big data & analytics
- Mind the gap: business problems and data science solutions
- Closing the loop: sensing, storing, analysing, responding, learning
- Digital transformation challenges
- What is the analytics maturity of your company?

Coaching Session 1

After successful completion of the programme you will become a member of the alumni network of Rotterdam School of Management, Erasmus University. Alumni have several benefits, such as discounts on lifelong learning and RSM networking events, receiving RSM newsletters and research updates and opportunities for recruitment.

WWW.RSM.NL/LCBD
Module 5: Current technologies for data analysis
- Overview of popular analytical methods
- Over-fitting, model validation and complexity control
- Opportunities and challenges of big data analytics

Module 6: IT Architecture for Big Data Analytics
- Technology stack
- Advanced technologies, such as Hadoop, Spark
- Data standards and security
- Blockchain game and best practice cases

Evening
Use Cases Working Dinner (Coaching Session)

Module 7: Advanced technologies for data analysis
- Predictive and probabilistic modelling
- Heterogeneity and personalisation
- Segmentation and model-based clustering
- Expert Lecture Best on AI and Big Data in medical imaging

Module 8: Visualising & Presenting Big Data Analyses
- How to summarise and explore big data
- Data visualisation technologies
- How to present data features in appealing and convincing ways
- Expert lecture

Coaching Session 2

Module 9: Presentation Use Case status
- Interactive workshop and presentation of the first draft of your company assignment
- Collective discussion and feedback for company assignments from professors and participants
- Sharing of initial ideas about business cases

Module 10: Legal and privacy challenges
- Ethical challenges when using big data
- Privacy and security considerations and legislation
- Guest lecture on GDPR

Evening
Social event and dinner in Rotterdam city centre

Module 11: Multichannel business analytics
- Advanced analytics in a multichannel setting
- Business models and the value of information
- Developing your business case
- Accelerator approach
- Expert lecture on Fintech

Module 12: Digital Marketing
- Digital marketing and marketing analytics
- Management game: data-poly game

Coaching Session 3

On the final day, as result of Use Cases results, recommendations are presented to senior executives. They are invited to reflect and discuss outcomes.

Module 13: Learning from practice
- Practical experiences with contributions from guest speakers
- Overcoming legacy and silos
- Requirements of data engineers versus data scientists
- Technical and managerial best practices
- Interactive discussion: what can incumbents learn from online players?

Module 14: Developing Analytics capabilities in the Organization
- Business Analytics development and management
- Expert lecture Analytics development in the organization

Module 15: Final presentations Use Cases
Results of company-specific big data applications and in-class discussions that address topics presented during the course; initial prototypes, results of analytics studies, business case calculations and videos
- Active participation from senior executives
- Evaluation of business potential, application of proper data science analysis, presentation, visualisation and credibility of the pitch, feasibility of implementation

Evening
Certificate Award dinner ceremony
Rotterdam School of Management
Erasmus University (RSM)
is one of Europe’s top 10 research-based business schools. RSM provides ground-breaking research and education furthering excellence in all aspects of management and is based in the international port city of Rotterdam – a vital nexus of business, logistics and trade. RSM’s primary focus is on developing business leaders with international careers who are a force for positive change in the world thanks to a first-class range of bachelor, master, MBA, PhD and executive programmes. Study information and activities for future students, executives and alumni are also organised from the RSM office in Chengdu, China.

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