

Table of Contents

Acknowledgements	10
From decision support to artificial intelligence	12
How to use this series	15
Introduction	16
A brief history	18
Defining the environment	21
Data and analytics at the end of the 2010s	23
Report on the current situation	26
Mega problems	28
Disillusion with not delivering the promised benefits	28
Insufficient flexibility and speed in meeting the clients' requirements	35
Lack of trust in the quality of the content and the environment as a whole	45
Consequences	53
Creating parallel elements of data and analytical architecture	54
Creating parallel/local organizations in the D&A environment	55
Multiplying the general environment content	55
Underusing a significant part of the environment	55
Trends	57
External trends effecting the field of data and analytics	57
Digitization	57
Constant growth in data volume	63
Artificial intelligence	65
Connectivity and convergence	68
Robotization and intelligent automation	70
Shifts in the work model	77
Shortage of skilled labour	81
The need for analytical knowledge spreading into other professions	82
Simplification	83
Increase in regulatory requirements	83

Natural language conversations	85
Digital twins	88
Virtual and augmented reality	88
Blockchain	89
Cybersecurity	90
Quantum computing	94
DNA computing	95
Internal trends in the D&A environment	97
Data quality	97
Trust and ethics	98
Data governance	106
Business ownership of the D&A environment	106
Asset sharing	108
Education programmes	108
Visualization and storytelling	108
Integration of analytics into business processes	109
Data monetization	109
Consolidating and cleansing old analytical output	111
Big data	112
Real-time analytics	114
In-memory analytics	115
Edge computing	117
Cloud	119
Contextual delivery and mobile intelligence	122
AI-enhanced analytics	122
Analytics integration into Enterprise Architecture	122
Summary	123
How to deal with trends and mega problems	124
 Bibliography	 152
Index	162