

The **Intelligent** Company



Five Steps to
Success with
Evidence-Based
Management

BERNARD MARR

THE INTELLIGENT
.....

COMPANY
.....

THE INTELLIGENT COMPANY

**Five Steps to Success with
Evidence-Based Management**

Bernard Marr



A John Wiley & Sons, Ltd., Publication

This edition first published in 2010
Copyright © 2010 John Wiley & Sons Ltd.

Registered office

John Wiley & Sons Ltd, The Atrium, Southern Gate, Chichester, West Sussex, PO19 8SQ,
United Kingdom

For details of our global editorial offices, for customer services and for information about how to apply for permission to reuse the copyright material in this book please see our website at www.wiley.com

The right of the author to be identified as the author of this work has been asserted in accordance with the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, except as permitted by the UK Copyright, Designs and Patents Act 1988, without the prior permission of the publisher.

Wiley also publishes its books in a variety of electronic formats. Some content that appears in print may not be available in electronic books.

Designations used by companies to distinguish their products are often claimed as trademarks. All brand names and product names used in this book are trade names, service marks, trademarks or registered trademarks of their respective owners. The publisher is not associated with any product or vendor mentioned in this book. This publication is designed to provide accurate and authoritative information in regard to the subject matter covered. It is sold on the understanding that the publisher is not engaged in rendering professional services. If professional advice or other expert assistance is required, the services of a competent professional should be sought.

Library of Congress Cataloging-in-Publication Data

Marr, Bernard.

The intelligent company : five steps to success with evidence-based management /
Bernard Marr.

p. cm.

Includes bibliographical references and index.

ISBN 978-0-470-68595-2

1. Business intelligence. 2. Business planning. 3. Management. I. Title.

HD38.7.M3658 2010

658.4'01-dc22

A catalogue record for this book is available from the British Library.

Typeset in 11.5 on 15 pt Bembo by Toppan Best-set Premedia Limited

Printed in Great Britain by TJ International Ltd, Padstow, Cornwall.

Life is not measured by the number of breaths we take but
by the moments that take our breath away.

I dedicate this book to the three people who matter the most
to me and who always take my breath away:

Claire, Sophia and James

CONTENTS

ABOUT THE AUTHOR	xi
FOREWORD	xv
ACKNOWLEDGEMENTS	xix
1 THE DATA-KNOWLEDGE CRUNCH	1
Introduction	1
The data and information explosion	2
The failure to turn data into mission-critical insights	3
Investment in business intelligence	6
Evidence-based management	9
Conclusions	12
2 THE EVIDENCE-BASED MANAGEMENT MODEL	13
Introduction	13
Evidence-based medicine	15

The scientific method	15
The EbM model explained	16
Conclusions	20

3 IDENTIFYING OBJECTIVES AND INFORMATION NEEDS 21

Introduction	21
How a police ‘SWAT’ team uses EbM	22
Step 1 – sub-step one: what do we need to know?	25
Strategic performance management frameworks	30
A strategy map as a hypothesis	50
Who needs to know what, when and why?	52
What are the most important unanswered questions?	54
Ten steps for creating good KPQs and KAQs	58
Conclusions	63

4 COLLECTING THE RIGHT DATA 65

Introduction	65
Key performance indicators and building evidence	67
Collecting the right data	69
What is evidence and what is data?	70
Data collection methodologies	71
Quantitative data collection methods	72
Qualitative data techniques	78
Using both quantitative and qualitative data	83
Making data collection part of the job	84
Engaging people in data collection	87
Assigning meaning to data	89
Reliability and validity	93
Planning the data collection process	94

The role of IT infrastructure and applications in the collection of data	96
Conclusions	100
5 ANALYSE THE DATA AND GAIN INSIGHTS	101
Introduction	101
Data analysis	104
Budgeting and planning	112
Reporting and consolidation	113
Value-driver modelling	113
Experimentation	117
Role of IT infrastructure and applications in analysing data	129
Conclusions	132
6 PRESENT AND COMMUNICATE THE INFORMATION	135
Introduction	135
How to get the attention of decision makers	137
Publishing analogies	138
Guidance for presenting information	144
The role of IT infrastructure and applications in presenting information	151
Conclusions	160
7 TURNING INFORMATION INTO ACTIONABLE KNOWLEDGE	163
Introduction	163
Ensure that the available evidence is used to make the best decisions	167
Turning knowledge into action	172

x CONTENTS
.....

The knowing doing gap	173
Conclusions	188
8 CONCLUSION AND ACTION CHECKLIST	189
Introduction	189
Action checklist	193
Final words	207
REFERENCES	209
INDEX	213

ABOUT THE AUTHOR

Bernard Marr is a leading global authority and best-selling author on organizational performance and business success.

In this capacity he regularly advises leading companies, organizations and governments around the globe, which makes him an acclaimed and award-winning keynote speaker, researcher, consultant and teacher. Bernard Marr is acknowledged by the *CEO Journal* as one of today's leading business brains.

Bernard has written a number of seminal books and over 200 high profile reports and articles on managing organizational performance as well as Enterprise Business Intelligence. This includes the best-sellers *Managing and Delivering Performance* and *Strategic Performance Management*, a number of Gartner Reports and the world's largest research studies on the topic.

Organizations he has advised include Accenture, Astra Zeneca, the Bank of England, Barclays, BP, DHL, Fujitsu, Gartner, HSBC, Mars, the Ministry of Defence, the Home Office, the NHS, Mars, Tetley, Royal Air Force and Royal Dutch Shell.

Prior to his role at the Advanced Performance Institute, he held influential positions at the University of Cambridge and at Cranfield School of Management. Today, he also holds a number of visiting professorships and serves on the editorial boards of many leading journals and publications including the *Business Strategy Series*.

Bernard's expert comments on organizational performance have been published in a range of high-profile publications including the *Financial Times*, the *Sunday Times*, *Financial Management*, the *CFO Magazine* and the *Wall Street Journal*.

Bernard can be contacted via email at:
bernard.marr@ap-institute.com.

ABOUT THE API

The Advanced Performance Institute (API) is the world's leading independent research and advisory organization specializing in organizational performance. The institute provides expert knowledge, research, consulting and training on concepts such as Strategic Performance Management, Performance Measurement and Enterprise Business Intelligence.

The aim of the API is to provide today's performance focused organizations with insights, advice and services that help them deliver superior performance. Customers of the API are wide ranging and include many of the world's leading blue chip companies as well as public sector organizations, governments and not-for-profit organizations around the globe.

Some of the services offered by API are summarized below.

Knowledge and research

- The API conducts internationally recognized research with the aim of understanding and sharing the latest trends and best

practices in the field of managing, measuring and analysing organizational performance.

- A wide selection of case studies, research reports, articles and management white papers are freely available to download from the API website.

Audit and reviews

- Extensive research and implementation experience across the world puts the API into a perfect position to assess existing performance management and business intelligence approaches and compare them with current global best practice.
- Audit and benchmarking solutions help organizations identify where they can improve their performance and get more value from their performance management and BI initiatives.

Consulting

- Based on the latest thinking, the institute can deliver a proven and tested process for designing performance management frameworks and initiatives.
- Perfected through real-life implementation experience across many industries, the institute is able to facilitate each step of the design process to ensure clearly articulated strategies, state of the art strategic maps, meaningful performance indicators and aligned processes, so that performance information is communicated and used to inform day-to-day decision making and learning.

Training

- The API provides training and coaching on any issues related to performance management and business intelligence. These

are offered as either open enrolment training courses, or for maximum impact, can be delivered in customized workshops and training sessions within organizations.

For more information, and to download case studies and articles, please visit: www.ap-institute.com.

FOREWORD

Bernard Marr's book on *The Intelligent Company* and evidence-based management at times draws an apt comparison between business and medicine. The use of evidence as the primary guide to decisions and actions in business is clearly a similar idea to 'evidence-based medicine.' Yet the idea of using evidence in business decisions may elicit the same reaction I had when I first heard of evidence-based medicine. I thought, "Evidence-based medicine sounds great, but just what was medicine based on in the past?"

Just as I thought (incorrectly, as it happens) that science, medical evidence, and data were the primary basis of clinical practice, you may hold the comforting belief that evidence and data are widely used in making business decisions. Alas, that is often not the case. Despite the rapidly-growing availability of information from online transaction systems, the internet, point-of-sale systems, and other sources, our use of evidence-based management

isn't growing at the same pace. Many managers still manage and decide as if modern computing tools didn't exist.

There are several facets to this problem. First, there is still too much use of pure intuition in business. Intuition has its place in decision-making, particularly when it's based on experience refined over time. But that place should generally be last, not first. If you can't get data, if you can't do an experiment, and if you can't access the stored knowledge of your organization, then by all means use your intuition. But explore those other decision resources first.

Secondly, there is just too weak a link between the information that organizations do have available and the decisions that they make. As with medicine, some of my very intelligent friends who don't work in businesses often assume that the prevalence of 'business intelligence' systems and analytics of various types has to mean better business decision-making. But this assumption is often violated. Business intelligence systems generate reports that don't yield any decision or any action. IT organizations develop data warehouses with little notion of how they will be applied to decisions. Analytics are generated, but executives ignore them in favor of intuition or comfortable past practices. Most firms don't know what their most important decisions are, and how technology and information might be used to inform them.

The good news is that this regrettable situation is slowly improving. My own work on analytical competition suggests that some firms have made a strategic capability out of their data and analytical capabilities. In other firms, executives are beginning to look around at their massive investments in information systems and saying, "Weren't we supposed to be able to run the business better as a result of these?" Many are working to improve particular decision processes; in a recent study I did of 57 companies, about 90% could identify at least one important decision that they had tried to improve with data and analysis. Frequently-made decisions, such as product pricing or loan and policy origination

.....

in financial services companies, are increasingly being automated, with analytical or rule-based criteria embedded into business processes. There is, as Marr suggests, a long way to go, but progress toward evidence-based management is clearly being made.

Marr's book will clearly be of major benefit to individuals and organizations wanting to address the problem of insufficient evidence-based management. It fills a gap in the marketplace of ideas, in that no previous book has combined both a structured orientation to fact-based decisions, and a focus on using the outputs of business intelligence systems to make those decisions. While the book is all about the value of data and analysis, even the most mathematics-shy executive will not be deterred by the terminology and writing. And it considers not only the process and information for evidence-based management, but also the cultural and organizational changes necessary to bring it about.

Marr correctly compares the process of business decision-making to the scientific method. The approaches to analyzing and deciding scientific data will eventually be adopted in most or all successful businesses. It may take a while, but the paragons of evidence-based management already exist, and you will read about them in this book. However, if you adopt these approaches today in a widespread and diligent fashion, you will still be able to derive competitive advantage from their use.

Thomas H. Davenport
President's Distinguished Professor
in Information Technology and Management,
Babson College, Massachusetts, USA

ACKNOWLEDGEMENTS

It is impossible to write a book in isolation and therefore I need to thank everyone who has influenced my thinking on *The Intelligent Company*. In particular, my role in heading up the Advanced Performance Institute provides me with all the opportunities I need to develop and test new ideas, and I am indebted to my colleagues and the current Fellows of the Advanced Performance Institute: David Teece, Rob Austin, Dean Spitzer, Bruno Aziza, Péter Horváth, Klaus Moeller, Frank Buytendijk, Ian Shore, James Creelman (special thanks for all your help with this book), Leif Edvinsson, Marc André Marr, Mark Graham Brown and Paul Niven. Of course, so many other individuals have also influenced my thinking and I hope all of them know who they are and how much I have valued any input and dialogue over the years.

My work at Cambridge University and Cranfield School of Management has also laid many foundations of my thinking. Especially useful were the insights from my doctorate training,

which allowed me to develop my thinking on evidence-based management.

Of course I must thank the many people in companies and government agencies with which I have had the pleasure to work. Without all these organizations and their people it would have been impossible for me to develop my insights and tools. I therefore would like to thank all the many executives, managers and employees I have worked with over the years.

Finally, this book would never have been possible without the support from my wonderful wife Claire. Claire and our children Sophia and James are my clear priority in life and I am grateful that they support me. They provide so much inspiration to make the world a better place – and if this means helping organizations to become more intelligent and successful then this is a very small and humble, but hopefully worthwhile, step in the right direction.

THE DATA-KNOWLEDGE CRUNCH

Evidence-based management is a simple idea. It just means finding the best evidence that you can, facing those facts, and acting on those facts.

Professor Robert I. Sutton, Stanford University

INTRODUCTION

To use a 19th century analogy to begin a book that explains how to overcome the 21st century challenges of converting ever-increasing amounts of data into insights that drive effective decision making might seem odd. But this is exactly what I will do, and for good reason.

Think of the California gold rush of 1849. People flocked en masse to that US state with the hope of making their fortunes from unearthing more of the gold that had just been found. A core tool, or technology, used by these prospectors was a gold pan,

2 THE INTELLIGENT COMPANY

which would sift out gravel, sand, sediment and so on, but retain the heavier gold nuggets. By panning the endless tons of worthless silt, the prospectors hoped to find those few precious nuggets of gold that would make them rich men. A few did indeed become hugely wealthy, but most returned to their homes having either expended their investments without an adequate return (if any) or worse, bankrupt.

I now fast forward more than 150 years to the end of the first decade of the 21st century. Switching attention from gold prospectors to business managers – and analysing how the latter are attempting to secure financial and other gains from their particular economic and business landscapes – leads to a quite disturbing observation: most are behaving, and deploying interventions, in ways that are in reality little different to the gold prospectors of old.

Within enterprises today, business leaders are simply expected to pan masses of essentially worthless, or background, data, with the hope that somehow they will discover those golden nuggets that increase the wealth of the enterprise.

THE DATA AND INFORMATION EXPLOSION

To explain: thanks to a decade or so of breathtaking advancements in information and communications technologies humans now live in a world in which data, in all its forms, can be transmitted simultaneously to large numbers of people across the world by a single click of a button – and at the speed of light. Moreover, as a result of equally stunning technological improvements in data storage, much of the mass of data transmitted between employees resides *somewhere* in the enterprise – in databases, computer systems or other devices.

Within most medium to large enterprises the amount of data being exchanged and stored on a daily basis is almost incalculable:

as is its value, because this data is the core material required for forming those ‘golden nuggets’ of insights that enable the enterprise leaders to make better decisions and so ultimately gain measurable and sustainable financial and other successes.

And we should not forget that having rapid access to the best information for decision-making purposes is not just about securing the obvious gains such as increased revenue, profit or market share. Today, it might be as much about ensuring survival in increasingly networked and connected globalized economies by getting early warning signals of potentially catastrophic market problems or other failings. For instance, the credit crunch of 2008 led to the collapse of long-established and venerable companies such as Lehman Brothers and many other household names would have been lost to history if it were not for large-scale financial interventions by national governments. The aftermath of the credit crunch has been the destabilizing of global markets and national economies. As much as anything these events shone a spotlight on what can happen when senior managers lack insight into what is happening in their organizations and markets and when bad decisions are being played out in fully networked, global, marketplaces.

Only the most foolishly optimistic would believe that in today’s globalized economies the cataclysmic economic events of 2008 are isolated events. The implications are clear. Decision makers require a quality and accuracy of decision-support that is quantum leaps superior to a few short years ago. The rewards from getting those few golden nuggets of knowledge into the right hands at the right time might be astronomical.

THE FAILURE TO TURN DATA INTO MISSION-CRITICAL INSIGHTS

Yet, and despite the mouthwatering benefits on offer (be that growth or survival), few organizations are deploying practical,

reliable and replicable processes for unearthing those mission-critical insights. Research into the working practices of most organizations and their managers confirms that the ‘gold prospector’ analogy holds true. Many organizations are content to hoard data, in the mistaken belief that simply having the data available is in and of itself value-adding, leaving it up to individual decision makers to pan for those golden nuggets. Management writer David Apgar is correct when he says in his book *Relevance* that although new technologies, such as faster processors, bigger storage and optical fibres have made data storage easier, relevance has become less important: ‘Cheap information has tempted us to neglect relevance and led us into some bad habits,’ he writes (Apgar, 2008).

But not all organizations have fallen into bad habits. As one example, a global study (The Hackett Group, 2006) found that those finance organizations that were judged as world-class EPM (Enterprise Performance Management) performers generate significantly less reports than the non-world-class group – namely 691 reports per year per US\$ billion in revenues compared to 1474, and the reports were also much shorter.

On first reading it appears that the world-class group was less productive and less value-adding than their non-world-class counterparts. However deeper analysis tells a very different story. The finance staff of the world-class group spent considerable time ensuring that the reports that they provided to business leaders focussed on the critical information that was required for decision-making purposes. They weren’t just throwing a mass of data at business leaders with the instruction to besieged managers that somewhere in the mass of pages delivered would be something of value. So, the unwritten message is that managers should get their knowledge prospecting pans out.

The world-class group recognized that they have a core responsibility to apply their analytic skills in the translation of raw data into knowledge. And the rewards to their firms of doing