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ROTTERDAM SCHOOL OF MANAGEMENT, ERASMUS UNIVERSITY

The business school that thinks and lives in the future

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Contents

Introduction

The competitive advantage within

While a management scholar first coined the term 'human capital' in the 1960s, in some respects it's only in recent years that the symbiosis between workforce skill sets and economic growth has been fully appreciated. Witness the recently published second edition of the World Economic Forum's *Human Capital Report*, which looks to foster "... the opportunities for collaboration that fully leveraging the human capital potential residing in people's skills and capacities can bring."

In understanding that human capital is an acknowledged means of building competitive advantage for organisations and nations, it's disappointing to find that the Netherlands has dropped from 4th to 8th place in the WEF rankings of 124 countries. The report finds that in spite of the quality of the Dutch education system the skill sets of the recently graduated are in some respects relatively limited. At the same time, the potential offered by workers over the age of 55 years is not being leveraged with the result that older people face high levels of unemployment.

As a country we would do well to learn from our distinguished European neighbours, Finland (1st place in the report) and Denmark (2nd place) in particular, and put more impetus into creating training and lifelong learning opportunities for the nation's workforce. Instead of it being an overused cliché, it's time that employers and policy makers understood the reality that in this competitive world people genuinely are our greatest asset.

As a premier international business school and research institution, RSM understands the value that lifelong learning and the professional development of people brings to organisations. It's by keeping up with the new and reinterpreting afresh what's already known that keeps the smartest organisations ahead of the rest.

Reflecting this need for continuous learning, articles in this issue of *RSM Discovery* magazine explore: the importance of people during times of organisational upheaval; how organisations can manage ICT projects successfully; why neuromarketing techniques can predict consumer choices; the logic behind moving company HQs; using psychological theory to understand mergers and acquisitions, and how mining big data offers world-beating possibilities for Rotterdam's port.

I am certain that you will find the knowledge and expert insights offered in these articles to be of great value, and it is my hope that they will be useful to you in enriching your own human capital as well as that of your organisation.

Henk W. Volberda
Editor-in-chief *RSM Discovery*
Professor of Strategic Management & Business Policy
and Director Knowledge Transfer
Director INSCOPE: Research for Innovation

Rotterdam School of Management,
Erasmus University
Email: hvolberda@rsm.nl
Tel: +31 (0)10 408 2761
Web: www.rsm.nl | www.inscope.nl

Can brain responses to movie trailers predict success?

By ***Maarten A.S. Boksem***

Decades of research have shown that much of our mental processing occurs at the subconscious level, including the decisions we make as consumers. These subconscious processes explain why we so often fail to accurately predict our own future choices. Often what we *think* we want has little or no bearing on the choices we actually make. Now a new study provides the first evidence that brain measures *can* provide significant added value to models for predicting consumer choice.

Neuroeconomics and its offspring neuromarketing are emerging academic fields that use brain-imaging techniques such as electroencephalography (EEG) to bypass the "noise" of self-reporting and observe the brain activity that underlies particular consumer behaviour. These techniques allow scientists to see what happens within the brain when people are exposed to certain product or advertising stimuli.

What has remained unknown – until now – has been the extent to which these techniques can actually help marketeers to *predict* choice behaviour. Can neural measures add value to conventional methods in predicting an advertisement's or a product's commercial success?

Neuromarketing companies have long laid claim to the predictive powers of neural markers, using EEG to help clients decide on products and marketing campaigns. Companies rely heavily on market research – focus groups and large customer surveys form the basis of many corporate and marketing decisions. Often neuromarketing companies claim that self-reporting measures are inaccurate, while EEG techniques provide objective data on, for instance, the memorability of a commercial message, the respondent's emotional arousal, and the extent to which the advert captures attention and focus, information which can then be used to more effectively predict future consumer choice.

Yet while this data is of definite marketing relevance – granular brain response is helpful in optimising stimuli,

Can brain responses to movie trailers predict success? *(continued)*

By ***Maarten A.S. Boksem***

the core benefit of ad testing by means of EEG – its predictive power in relation to choice has never been scientifically validated. An ad may induce a strong and positive emotional response, but there is no proof that this will generate sales.

We designed a research project at the Erasmus Centre of Neuroeconomics that specifically aimed to test the claims of neuromarketing companies. Can neural measures provide unique information above and beyond conventional methods in predicting consumer choice?

"Can neural measures provide unique information above and beyond conventional methods in predicting consumer choice?"

Predicting box office success

The study we designed aimed to gather both EEG and stated preference measures (self-report preferences) – and then compare them to the participants end preference, their individual choice – and the choice behaviour of the population at large.

Using electroencephalography (EEG), the brain activity of 32 participants was recorded during individual viewings of 18 movie trailers. After viewing the trailer, participants were asked to rate the movie and indicate how much they were willing to pay for the DVD. They were then asked to sort 18 DVDs on a table into descending order of preference.

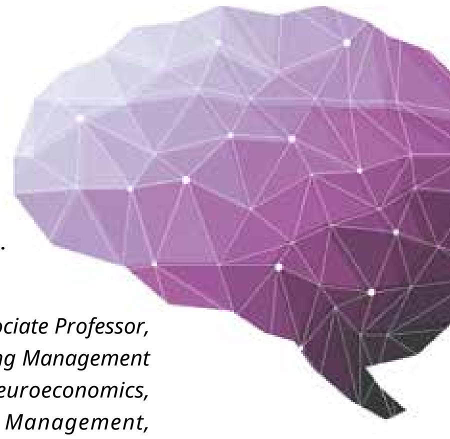
Movies are advertised pre-dominantly through trailers and are a primary influence for consumers in determining which movie they will see. The study also depended on obtaining population end result measures, which is more readily available for movies (ie, the US box office results), and sales data directly related to the ad, which is difficult to obtain with other products, where sales can be driven by other factors such as product placement. With movie trailers, the ad itself is also a sample of the product.

High-density, high-sampling-rate EEG recordings were taken to enable whole-brain, broad-spectrum analyses. As for how we analysed it – we didn't look for spikes in pleasure or things you would think might predict choice. Instead, we examined all the data and looked for distinct correlations between patterns in brain activity and individual preferences.

Both the EEG and stated preferences proved to be strong predictors of individual choice. We found that the higher the amplitude of EEG oscillations in the beta frequency range (16-18Hz) during viewing, the higher participants ranked the movie. Previous research has linked increased beta power with reward processing while lower frequencies have been related to losses and other negative outcomes. The stated preferences of participants also proved to be a strong predictor of the final choice individual's made in terms of their choice of DVD to take home.

Interestingly, when we added the EEG data to the stated preferences data, the predictive fit of the model increased compared to the model including the stated preference only. This implies that there is unique information to be found in EEG measures that cannot be captured by self-reports alone – and that perhaps a combination of EEG and self-reporting measures might produce the best predictive model.

The results were more profound when it came to population preference. While the model that included only stated preferences was not a significant predictor of the movie's box office success, the EEG data was a good predictor of box office success – or population preference. A clear correlation could be found between the movie's box office success and very high frequency oscillations in the gamma range (>60Hz) in participants' brain activity. Basically, the higher the frequency of oscillations during the viewing of the trailers, the more money the movie generated at the box office. Gamma band activity has been associated with states of enhanced arousal and focused attention.



In other words, the more participants were engaged in viewing the movie trailer, the more popular the movie – independent of individual preference, which showed no correlation with gamma power. Perhaps the trailers' ability to capture attention increased memorability, which in turn increased the probability of the individual choosing to see the movie. At any rate, gamma activity emerged as a significant measure and should, in principle, be effective in helping to predict a movie's commercial success.

What amazes me is that here is a small sample of individuals based in the Netherlands who could have brain activity that reflects the choices of Americans who went to see these movies in the US. Our testing was stringent, so it is very unlikely that this is an artefact of, 'yeah we just got lucky'.

Neural markers

This study is the first of its kind to provide evidence that EEG measures (beta and gamma oscillations) capture unique and valuable information for predicting individual and population-wide consumer choices. The neural measures we found significantly enhanced the accuracy of the prediction models, which opens up a whole new area for research and replication. The results will be published in a paper entitled *Brain responses to movie-trailers predict individual preferences for movies and their population-wide commercial success*, in the *Journal of Marketing Research*, one of the most prestigious journals in the field.

Currently there is a great deal of interest in this area of research. Neuromarketing companies want this evidence and they want new measures for predicting success, and studies such as this are where they may get their ideas from. This is the first scientific evidence that shows that, yes, neuromarketing companies play a meaningful role in the area of choice prediction. There is also a nice synergy there. Conducting comparative research is not their core area of interest. We do the fundamental academic research, the results of which can be used by them to help companies strengthen their performance.

While the results of this study are significant, it's important that we stay realistic and not over-claim. The sample size was small. We need to replicate this result before we can truly be certain that we have a valuable new tool on our hands. We want to see these results hold across many different types of commercials and populations. Our team has just completed a similar study and is in the process of analysing the data – the outcomes of which again look promising.

But given that even a small increase in accuracy in predicting the success of products or marketing stimuli can result in substantial increases in revenue, the implications of this research for companies are very interesting. We hope these techniques and neural markers can eventually become an extremely useful addition to every company's marketing strategy. ■

Maarten Boksem *is Associate Professor, Department of Marketing Management & Erasmus Centre of Neuroeconomics, Rotterdam School of Management, Erasmus University.*
EMAIL *maarten@boksem.nl*

Information about the activities of the Erasmus Centre of Neuroeconomics can be found at:
WEB ***www.erim.eur.nl/neuroeconomics***

The paper *Brain responses to movie-trailers predict individual preferences for movies and their population-wide commercial success*, written by Maarten A.S. Boksem and Ale Smidts, is forthcoming in the *Journal of Marketing Research*.
DOI: http://dx.doi.org/10.1509/jmr.13.0572

RSM Expertise

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Why are so many Dutch companies relocating abroad?

By ***Marc G. Baaij***

For much of the 20th century, most western multinationals had two somewhat separate identities: a vast multicultural, multi-country enterprise that stretched around the world, and a home office that tended to be very homogenous and even somewhat cosy, like the capital city of a sprawling empire.

There were often good economic reasons for this cultural division: the eastern and southern parts of the world tended to be an important source of raw materials, while the west and north were the home of capital, skilled labour, and customers. But now that more and more companies find that their most promising markets are in the east, along with some of their most promising talent and the fastest-growing pool of investors, the reasons for keeping corporate headquarters (CHQ) in the west are suddenly much less clear.

In a recent study I conducted with my RSM colleagues Tom J.M. Mom, Frans A.J. Van den Bosch, and Henk W. Volberda, we found that many of the 100 largest Dutch companies are moving or are planning to move some of their core head office functions abroad.

Stay or go?

I first became aware of this trend several years ago, in a previous position at a strategy consultancy firm. The CEO of a Dutch company asked the consultancy to advise him on whether the company headquarters should relocate to the US. They had recently made a major acquisition in the US, and the new company's centre of gravity had shifted there.

It was a bold move, and it interested me for a number of reasons. One was that unlike most corporate decisions, such as relocating a factory or changing a vendor, a headquarters move affects the executive team directly. Often, it represents a major personal commitment: it's one thing, for instance, to take an expat post in China for a year or two, and quite another to decide to spend the rest of your career in another country, far from home. For another, it seemed like a new stage in the internationalisation of companies – the advent of a world of truly global companies.

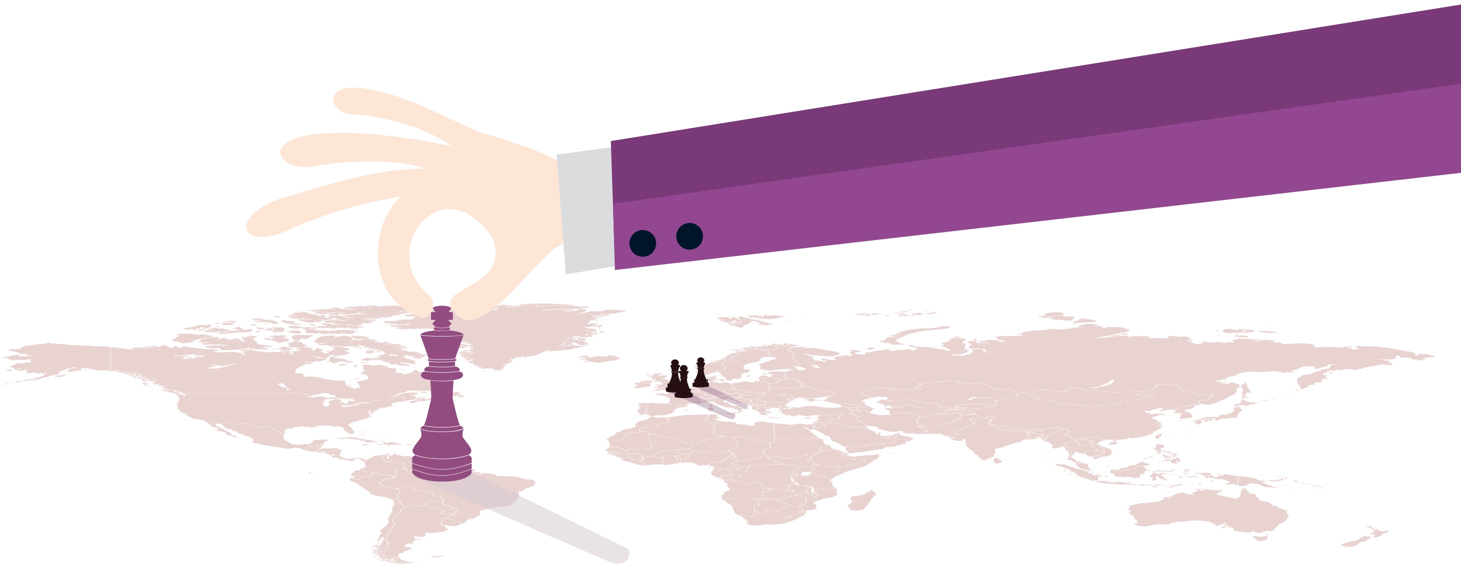
When I returned to university to teach, I looked into this issue more and found that although many scholars have investigated multinational management practices in some detail, they know surprisingly little about how companies make this kind of relocation decision.

To find out more, my colleagues and I invited the top executives of each of the top 100 Dutch multi-national corporations (MNCs) to fill out a survey. In all, 58 CEOs and their chief officers in four functional areas (finance, technology, procurement and human resource management) filled out surveys, and many of them also made themselves available for interviews.

Initially, we expected to find relatively few companies ready to leave the Netherlands. Except in certain extreme situations, such as a major merger, who would want to go to the trouble of moving their headquarters to a new country?

At first, this did seem to be the case. However, as we began to learn more, we realised that if you looked at the

> *"...geographical colocation is not a law of nature, particularly in this era of free and instantaneous global communication."*



head office as a conglomeration of three distinct groups – the executive team, core staff functions, and the company's legal home – the picture looked very different: 57 per cent of the corporations in our study have relocated one or more parts of their CHQ abroad, and within five years, 71 per cent of executives polled say, they will have sent at least one of their functions out of the Netherlands.

We also found that a few more core staffers have been relocated than executive managers – 43 per cent to 41 per cent. This balance may shift, however, over the next five years. Sixty per cent of executives surveyed say they expect their executive teams to be relocated, while 48 per cent expect more core staff to be sent abroad.

Rather than making a shift abroad in one giant step, companies are moving incrementally. The changes seem to be more like something I've seen at a major Dutch company that still keeps its big office headquarters here: although the façade is the same and the company's logo is still on the building, the offices keep getting emptier – that is, those that have not been leased out to other tenants – as more of its key executive operational functions are being sent elsewhere.

So far, none of the corporations within our sample have relocated their entire headquarters. However, the number of companies that have moved one or two of the three functions abroad has grown, and 5 per cent of respondents intend to move all three functions over the next five years, at which point they will effectively become non-Dutch companies.

Why relocate?

A number of factors encourage executives to send particular functions away: either to get closer to strategic stakeholders, to gain better access to key resources (including capital, talent, and industry-specific services), or for tax or regulatory advantages.

Often, such moves are made in order to keep up with a major change in the market. For example, one executive told us, 'Our top-line growth has to come almost exclusively from emerging markets. In five years' time the majority of our sales will be from non-western markets. How are we going to realise that ambition with a CHQ that is almost completely staffed with home country natives who operate from an office in the home country?'

Few managers now assume that they need to keep all the core functions of their executive leadership in the MNC's home country; after all, geographical colocation is not a law of nature, particularly in this era of free and instantaneous global communication. Moving core aspects of the central office overseas may bring strategic benefits to the MNCs.

But even if a move makes sense on paper, sending functions abroad is a big decision. 'You cannot just pick up your headquarters and expect all of your talents to go with you,' one executive said. Many key staff members won't necessarily follow. Legal barriers and domestic political considerations may also make relocation more costly than it might appear.

Despite these challenges, we expect to see the lights continue to go out one by one in corporate headquarters all over the Netherlands. The cost and efficiency advantages to being a fully global enterprise are too great. This does not necessarily mean that every Dutch C-suite will be on the next nonstop from Schiphol to Shanghai, nor that those functions will find a new permanent home. Instead, over time, our research suggests that boards will treat the location of MNC executive functions like any other corporate asset, and subject it to a continuous, dispassionate review.

These relocations also raise some important questions for managers and management scholars. What will happen to corporate cultures if executive functions are no longer geographically centralised? How much more difficult will it be to create a strong culture when so many employees no longer spend their entire working life with one company or even in one building? Will employees feel as loyal when they log on to a company website as when they walk in through the front door of a headquarters building? Will staff be able to feel close to a company that is more or less in constant motion? ■

Marc Baaij *is Associate Professor of Strategic Management, Department of Strategic Management and Entrepreneurship, Rotterdam School of Management, Erasmus University.*
EMAIL *mbaaij@rsm.nl*

This article is based on the paper *Why do multinational corporations relocate core parts of their corporate headquarters abroad?*, written by Marc G. Baaij, Tom J.M. Mom, Frans A.J. Van den Bosch, Henk W. Volberda and published in the journal *Long Range Planning* 48 (2015) 46–58. DOI: http://dx.doi.org/10.1016/j.lrp.2012.07.001

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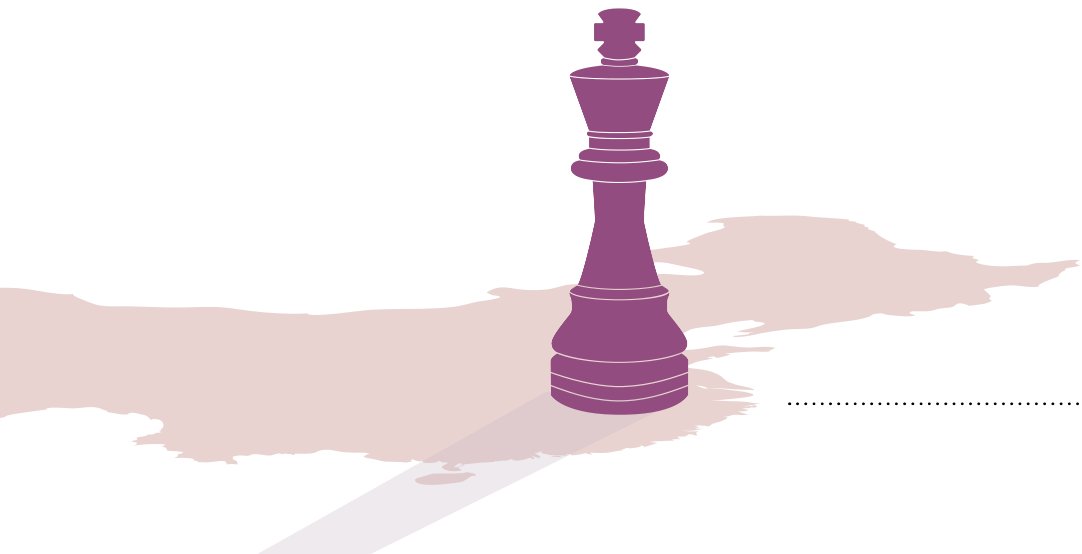

RSM Expertise

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More information about the department and its work can be found at:
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Pride and fear during major organisational change

By ***Cees van Riel and Guido Berens***

Organisational behaviour experts have known for a long time that when employees identify closely with their company, the company functions better. People quit less often, they work harder, and they tend to be more supportive of their employer. And in a volatile time, such as during a merger, corporate success may depend on nurturing employees' pride and alleviating their fears.

A number of studies have found that employees' degree of self-identification with their company depends on the degree of pride they feel in belonging to that organisation. However, researchers are much less clear yet about how other emotions employees feel about their employer might affect their degree of self-identification.

To find out what other factors besides pride might affect this sense of closeness, we decided to study the attitudes of employees working for a famous retail bank in the Netherlands that was in the process of a forced merger with its multinational parent.

Both the bank and its parent had strong brands. Strategically, the decision to merge the bank's brand into the larger corporate identity was criticised by many external consultants who saw this as a mistake, but for us, as corporate communication scholars, it provided the perfect situation to examine the dynamics that drive employee alignment in a volatile time.

In addition to these theoretical interests, we hoped to discover what kind of messages managers should give to their employees in order to encourage them to maintain their feelings of closeness to the company during a major corporate event such as a merger or a spin-off.

Unwilling assimilation

Our study was conducted at a European bank we will call Pecunia that employs approximately 2,500 employees. Pecunia used to be a government-owned institution before its privatisation in 1990. In 1991 it merged with two other financial institutions to create the APEX group (another pseudonym). In 2005, APEX prepared to discontinue the Pecunia brand and bring it under the marketing umbrella of its global financial services brand. At the same time, APEX managers intended to reduce the unit's degree of autonomy as part of a larger push to consolidate its global operations.

Our questions concerned how employees felt about the bank where they worked, how they felt about the larger parent company that intended to assimilate them, and their perception of the bank's external image.

We reviewed the bank's internal and external communications, to better un-

Pride and fear during major organisational change *(continued)*

By ***Cees van Riel & Guido Berens***

"...we asked the respondents to provide characteristics that they found to be essential to their organisation and those they used when they described their organisation to others."

derstand how the bank projected its identity to the outside world. We also conducted one-hour interviews with 52 bank employees, including the entire top-management team. In the interview, we asked the respondents to provide characteristics that they found to be essential to their organisation and those they used when they described their organisation to others.

We asked such questions as 'Which organisational characteristics are crucial to the organisation; in other words, if removed, your organisation would no longer be the organisation as you know it?' and 'How does your organisation differ from competitors and other financial companies?' A total of 25 characteristics were mentioned by more than half of the interviewees.

Popular characteristics

Using a chart that listed the 25 characteristics, we designed a survey and asked respondents to indicate (1) the extent to which they agree these characteristics apply to Pecunia on a five-point scale ranging from "completely disagree" to "completely agree"; and (2) the extent to which they regard the characteristics as attractive (irrespective of whether they believe they apply to Pecunia) on a five-point scale ranging from "very unattractive" to "very attractive". We collected surveys from 751 employees of the bank.

Our theory was that the more attractive the respondents felt the bank to be, the more strongly they would identify with it. At the same time, the greater they believed the external prestige of the bank to be, the stronger their identification would be. However, we also guessed that the strength of their positive feeling for the new company would weaken the importance of their perception of the bank's external prestige to the employees.

As we had predicted, the values projected about the organisation's identity and a positive bond with the new company (APEX) increased employee identification with the old company. Our explanation is that because the identity of the parent corporation was stable, it served as a source of certainty and continuity during the merger.

This suggested to us that in addition to pride, a second factor also affected self-identification: fear. We believe employees may start to feel closer to their employer if the employer helps reduce their uncertainty about the future, and farther away if it doesn't. Their heart might be with the old brand, but because their salary depends on the new company, their loyalty will follow.

These findings could help explain the resilience of employee identification even in the event of a company scandal or external threat. In such situations, people may be less vulnerable to doubt when they can depend on multiple motives for identification. One might even argue that the existence of multiple motives makes the identification more robust.

Finally, as with any kind of relationship, our research suggests that multiple motives probably play a role in the kind of attachment an employee feels for his or her company. In this case, when it comes to deciding whether to identify more with the new owner or the acquired business unit,

RSM Expertise

The Corporate Communication Centre (CCC) is a joint initiative of Rotterdam School of Management and the business community, and aims to develop and expand knowledge in the field of corporate communication. The centre conducts scientific research as well as applied research for the business community.

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employees tend to prefer the group that offers more certainty, even if the group doesn't offer as much prestige. One result of this is that the more employees identify with the acquirer, the less likely they are to identify with the business unit where they are actually employed.

Counting the ways

We have much more to learn about the self-identification process, including all of the motives that may affect its intensity. Nor are we entirely clear yet about the effect of interplay of these motives on employee identification. On the one hand, having multiple motives may make the connection more robust and resilient: if one motive weakens, it could be substituted by another motive. On the other hand, it's also possible that motives may sometimes conflict, particularly in a time of change.

However, we believe managers can draw at least four important communication lessons from this study:

1. In an uncertain time, employees need plenty of reassurance. To reduce employee anxiety, be crystal clear about who you are as an organisation. For the most part, employees will cling to a projected organisational identity that offers a feeling of certainty.

2. Before, during and after a major event, such as a merger, emphasise the mechanics and the rationale of the event less and the identity of the company they will be working for more.

3. In the event of a merger, it's usually better to make the brand change gradually, so employees and customers have time to grow accustomed to the identity of the new organisation.

4. Whether the transition is long or short, try to encourage employee identification with the new company. The better the employees feel about the parent, the more likely they are to feel a part of it. ■

This article draws its inspiration from the paper *Organizational Identification during a Merger: The Role of Self-Enhancement and Uncertainty Reduction Motives during a Major Organizational Change*, written by Mirdita N. Elstak, Mamta Bhatt, Cees B. M. Van Riel, Michael G. Pratt and Guido A. J. M. Berens, and published in the *Journal of Management Studies* 52:1 Jan. 2015.
DOI: http://dx.doi.org/10.1111/joms.12105

Cees van Riel *is Professor of Corporate Communication, Department of Business-Society Management, and Director, Corporate Communication Centre, Rotterdam School of Management, Erasmus University.* EMAIL *criel@rsm.nl*

Guido Berens *is Assistant Professor of Corporate Communication, Department of Business-Society Management, and a member of the Corporate Communication Centre, Rotterdam School of Management, Erasmus University.* EMAIL *gberens@rsm.nl*

"...it provided the perfect situation to examine the dynamics that drive employee alignment in a volatile time."

The value of big data to big ports

By ***Rob Zuidwijk***

The Port of Rotterdam is sitting on a goldmine of data. But is this gold being effectively mined? The "internet of things" is fundamentally changing global supply chains. The effective use of information will have a positive impact on everything from operational efficiencies to credit terms and cash flow.

In the 1960s a standard was introduced for shipping containers and the infrastructure needed to process them during transport. Although the standard was slow to be globally adopted, the time it takes to move 30 tonnes of goods from a ship to dry land has been reduced spectacularly to a mere 100 seconds.

While this is great news for stakeholders it means that a ship's captain can no longer physically inspect the goods. Instead we rely almost completely on the information surrounding the containers to efficiently (and securely) move them.

Research we have recently undertaken, in essence, offers a stylised examination of these two high-level concepts: how to efficiently move large quantities of goods and (more importantly) the appropriate management and dissemination of the *information* surrounding the containers in order to make intelligent decisions about the handling of goods.

Shifting from a physical inspection of goods to a reliance on information has changed the shape of supply chains. As Ronald Paul, chief operating officer of the Port of Rotterdam Authority succinctly puts it: 'Without data, no logistics.'

The amount of available information on transported goods is vast. There may be hundreds of stakeholders in a single supply chain, with each stakeholder having very different priorities and viewpoints, as well as very different types of information to add to the pool. The Port of Rotterdam deals with thousands of supply chains and 12 million containers every year, making it one of the most potentially information-rich transport hubs on the planet.

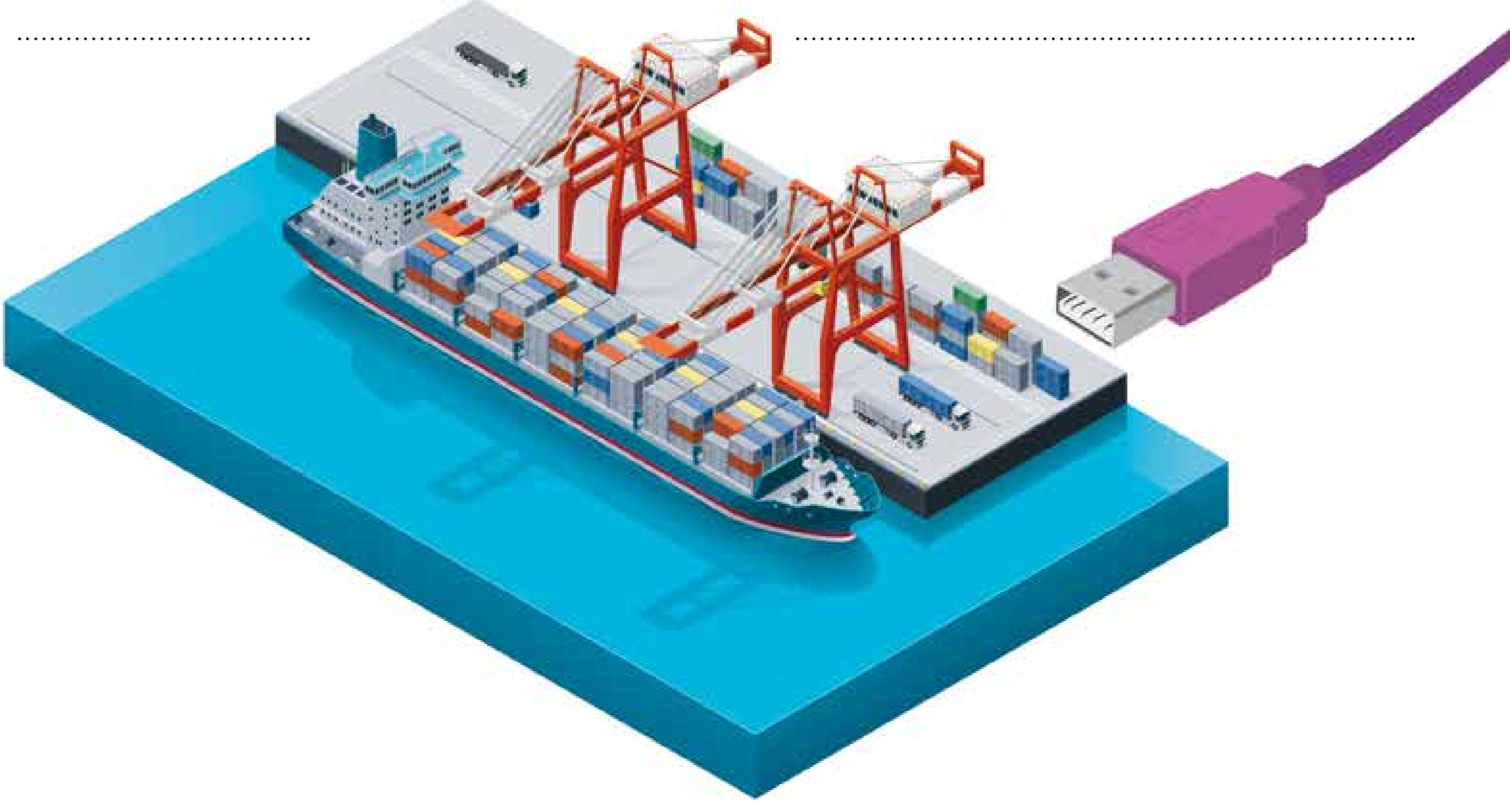
However the only way to create value with information is to use it. This seems intuitive but many companies struggle with the application of this principle. In our paper *The value of information in container transport*, we demonstrate using mathematical argument that even if you gather only a little more information than you had before, the result could be a significant improvement in current processes. But this only holds true if that available information is actually used.

The transport industry has traditionally been relatively slow to understand the full potential of the information it holds. Even the Port of Rotterdam's white paper, *Port Vision 2030*, does not consider information much beyond its enabling role in operations highlight the role of ports. In this paper, the port is naturally described as a global transportation hub and industrial cluster, but not as the hub of information that economic and social theory expert Jeremy Rifkin foresees when he says: 'Rotterdam is the future world port capital of the Internet-of-Things.' However this is progressively changing…

"…if you gather only a little more information than you had before, the result could be a significant improvement in current processes."

Mining the golden data

As recently as 2013 there have been pleas for a coherent approach to information gathering and distribution within the shipping industry. Since the beginning of this century the Port of Rotterdam has invested



€100 million in its intelligence systems, with an end-goal of refining its role in supply chains.

Portbase is a central information system allowing every stakeholder in a supply chain to log in and add relevant information as well as track goods and other key details. There are more than forty services offered via a single portal. This has had a positive effect on lowering administrative costs while reducing the combined number of yearly phone calls by 30 million and the number of yearly emails by 100 million.

It has also reduced the number of trucking kilometres to and from the Port of Rotterdam by 30 million per year. This emission reduction is paired with the port's commitment to be part of the Third Industrial Revolution in which renewable energy, particularly wind energy, is the primary or only source of power and Rotterdam will offer the lowest ecological footprint of any port in the world by the year 2030. It is interesting to note that windmills now power the new APMT terminal in the 'world's smartest port'!

Jeremy Rifkin's statement that 'there will always be transport' does not imply that the nature of the transportation business will not change. This change has been signified by the introduction of the maritime container standard, and new developments are under way. Indeed, the Netherlands and the Port of Rotterdam are forerunners in the deployment of automated transport solutions, both for the transportation of people and freight. Such developments will change the transport business completely, as the supplier of freight mobility services using automated transport are yet to be determined. And again, information is key.

In order for large hubs like Rotterdam to thrive, Rifkin urges the port to establish itself as the hub of 'the logistics internet: a network that integrates existing logistical infrastructure so that the billion plus people in the EU region can engage in commerce and trade with efficiency and ease - and with a low carbon dioxide footprint.'

Mathematically, our ideal-scenario paper offers some proof of this notion: that collection, processing, and efficient dissemination of information is a valuable, and probably very saleable, asset. This basic principle may be extrapolated to any industry that sells products or services.

Customisation of services

The one-size-fits-all approach to shipping cargo worked in the 1960s. Standardised processes were established that significantly decreased shipping and handling times. Fifty years later though, we believe this system has matured to a point where we can use information and information systems to diversify service options for the customer. This kind of diversification can be seen in airlines' different class offerings, and some transport companies are doing it on an ad-hoc basis. However, there is not yet a systematic approach, although port operators are making first steps as we speak.

The lack of a systematic approach is partly due to knowledge gaps surrounding particular cargo. While broad sub-groups of container types are clearly defined (refrigerated units are easily identifiable, as are those containing hazardous substances), the specific contents are often not known to key stakeholders. For instance a port operator may not be aware that a particular container contains valuable computer parts or blood samples requiring extremely delicate handling.

On one hand this can be advantageous: ignorance is often bliss where liability is concerned. But on the other hand an opportunity is lost: it is pure speculation to wonder how many customers may prefer a more expensive "premium" handling option for their goods, but with no systematic way to include this information in the cargo's notes we will never know. As fast and reliable shipping is often an integral part of the credit terms and cash flow of businesses, global port authorities may be well served by following the Port of Rotterdam's example and more effectively collecting and managing crucial information.

Although our paper itself is theoretical, we do believe it signals an important fact in practice; namely that the port as a global hub has still a lot to gain from sharing and using data, in particular to improve container transport performance and therefore improving efficiency across the entire supply chain. ■

"…global port authorities may be well served by following the Port of Rotterdam's example and more effectively collecting and managing crucial information."

Rob Zuidwijk *is Endowed Professor of Ports in Global Networks, Department of Technology and Operations Management, Rotterdam School of Management, Erasmus University.*
EMAIL *rzuidwijk@rsm.nl*

The paper, *The value of information in container transport*, written by Rob Zuidwijk and Albert Veenstra, was published online 22 April 2015 in the journal *Transportation Science*. DOI: http://dx.doi.org/10.1287/trsc.2014.0518

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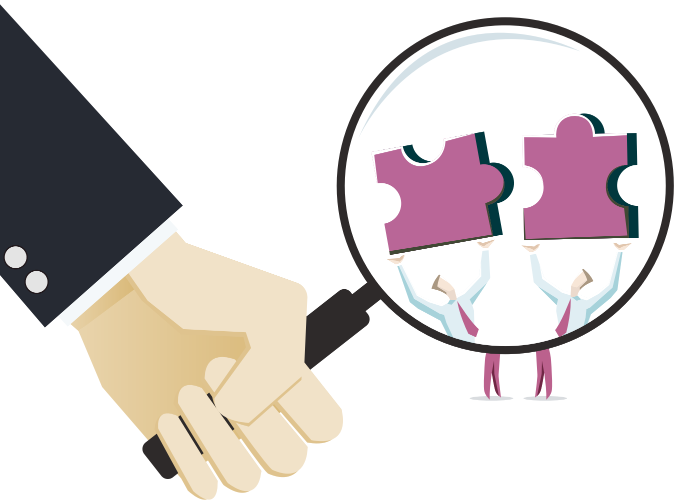
A psychological lens on the acquisition process

By ***Taco Reus***

The application of psychological theories to understand the world of business can be a fascinating exercise. Some might argue that an artificial legal entity and its administrative processes cannot be examined in the same way as humans and their behaviour can be. However, empirical observations through the lenses of psychological theory suggest findings can be revelatory and provide rich insights for smart strategic thinking.



Despite the advances being claimed for artificial intelligence, the days when companies might be able to run themselves look a long way off. Rather, as long as companies are populated and managed by men and women, corporate thinking and corporate processes closely mimic those of the humans involved. Psychological theories dating back as far as the early 1900s help us to understand how "firms" behave, their strategic direction, and ultimately what determines their successes and failures in competition.

A case in point is the use of psychological theory to understand mergers and acquisitions, and the diverse challenges firms face in the acquisition process. The process is like a journey that takes would-be acquirers from the very secretive pre-deal phase of backroom planning, due diligence, and tense negotiations, to the very public post-deal phase when the announcement brings the deal into the spotlight of staff, competitors, consumers and regulators, and subsequent post-merger integration.

Psychological lens

A psychological lens sheds light upon various key events in the process, and provides insight into how firms can optimise the chances of acquisition success, and the uncomfortable fact that so many fail to deliver the promises made for them in the heat of battle.

In the pre-deal phase, the strategic decision-making on whether to proceed with an acquisition and what to pay for a deal is generally made by a small team of executives, acting as part of a broader confidential strategic corporate development plan. In all likelihood, they will be drawing on information provided by employed in-house analysts or highly paid external advisers.

This pre-deal information search and sense making is an analytical process based on much data collection on the target and industry in search of potential for synergies. Yet, while the analysts are deriving conclusions based on much information, the executives in charge of the strategic and tactical decision-making process itself are often left with summaries and distilled conclusions. For those executives the process therefore essentially remains highly uncertain even when they can turn to a large number of advisers.

Anchoring theory

Psychological theory, stirred by the seminal research of Tversky and Kahneman, suggests that under such conditions of heightened uncertainty, decision-makers are plagued by biases – they are bound to use unconscious simplification techniques to make the decision controllable. In our research we found that in the process of deciding what premium to pay for a deal, acquirers seem to be overly drawn to the premium that was paid for the preceding deal in the market. The preceding deal's premium forms such a hard and simple fact that it is anchored in executives' minds.

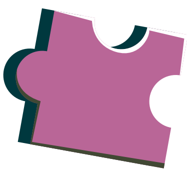
Anchoring theory in psychology explains that executives can't help but give more weight to information that agrees with the anchor (ie, the pre-

A psychological lens on the acquisition process *(continued)*

By ***Taco Reus***

ceding deal's premium), and give less weight to information that disagrees with it, even though it may be more relevant to the focal decision (ie, what premium to pay for the focal deal). Our research supports this premise, particularly when preceding acquisitions happened more recently and were similar in size, when focal deals were executed in a foreign market, and when acquirers lacked acquisition experience in the target market or had a higher acquisition rate.

Given the constraints upon collecting information on putative targets, anchoring might enable managers to make rapid decisions and persuade shareholders that their proposed premia represent acceptable standards in the industry. However, by overly relying on preceding acquisition premia, managers may ignore important information specific to the focal deal. Decision-makers, as well as their advisers, therefore would be wise to consider the influence that such anchoring has on their decision-making, possibly by incorporating hard checks to make the influence of anchoring more explicit, and reduce exposure to its risks.



Psychological theory also helps to make sense of contradictory findings about the organisational processes involved in such strategic events. For example, researchers found that experience in doing acquisitions is positively, negatively, and insignificantly related to acquisition performance.

Organisational experience

A psychological theory of learning – known as transfer theory – helps to explain these contradictory findings. It argues that people apply but also misapply their experiences in subsequent tasks depending on whether the focal task is structurally rather than superficially similar to the prior experiences. Cognitive psychologists therefore have studied when people make positive transfers (when prior experience applies well to a new task), and negative transfers (when prior experience does not apply well to a new task).

Because organisational routines can be as rigid as individual routines, this transfer theory also helps to understand the role of organisational experience. We found that firms that make large deals are served well by their experience if they have made large deals in the past. However, many firms making large deals predominantly have experience in making small deals.

We found that such small-deal experience hurt more than it helps in doing large deals. Mega-deal performance tends to suffer because the routines developed through small-deal experiences that tend to affect only a small part of the acquiring firm do not apply in the large-deal context that affects a large part of the acquiring firm.

Fortunately, the rich psychological research on transfer theory also provides recommendations on how to avoid these negative effects. For example, when the firm is able to retain key employees of the acquired firm, negative transfers are less likely because they are not rooted in the same organisational routines and allow what psychologists have termed intentional mindful abstraction: the process of actively considering whether established routines would benefit a new task or need considerable adaptation.

Knowledge transfer

Psychology theory can shed new light on processes that have been considered extensively from other angles before. For example, many researchers and consultants strongly assume that knowledge transfer benefits performance and this assumption is so widespread that for many it seems too obvious to examine empirically. Yet, the behavioural theory of the firm – arguably the most psychological among or-

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ganisational theories – sheds a different light on the relationship. It reveals that knowledge transfer can actually hurt performance.

While M&A research has stressed the disruptive nature of post-merger integration on the acquired firm and its knowledge base, the findings from one of our recent studies on international acquisitions suggest that, at least in part, knowledge transferred from the acquirer to the acquired firm may itself be the root of disruption.

We found that so-called non-location-specific knowledge, such as managerial or operational knowledge, of the acquirer can disrupt the power dynamics and routines of the acquired firm because it forms a threat to pre-existing knowledge of the foreign acquired firm. Non-location-specific knowledge transfer might destabilise power structures, to the detriment of the performance of foreign acquired firms, particularly for acquirers with strong pre-deal success who might be overly confident in their own knowledge.

Moreover, also in the context of international acquisitions, psychological theory helps in understanding cultural influences when attempting to win the hearts and minds of staff in the acquired organisation. Psychological theory suggests that paying heed to the emotions of others is constrained by cultural differences because of an ethnic bias (ie, people are attracted more toward people from the same cultural background) or because of a lack of familiarity (ie, people generally have less insight into the life of people from more distant cultures).

Indeed, we found acquirers generally had more difficulty to attend to emotions when they made their deals in culturally more distant countries. Yet, we also found that acquirers tend to attend more to emotions when they made their deals in countries with a humane orientation – that is 'societies [that] encourage and reward individuals for being fair, altruistic, friendly, generous, caring, and kind to others' (House et al, 2004).

When it comes to implementing an acquisition effectively, we also found that psychological insights about justice are crucial. Justice research has argued and demonstrated that fairness of processes and procedures affect the attitudes and behaviours of those impacted by such practices.

The central conclusion of this work is that people tend to accept decisions more if they consider the process of making this decision to be fair. People will then think more positively about the decision, even if it negatively affects them. In the context of acquisitions we found that providing clear justifications for the decision is important for short-term performance directly following a deal, but not for longer-term performance. In contrast, providing a voice to those affected by the deal (acquired employees) has no impact directly following the deal but does positively impact upon longer-term performance.

To close, a psychological lens can provide interesting and novel insights into consequential strategic decisions, and the acquisition process in particular. This has real, practical implications therefore executives are advised to be aware of the psychology behind the acquisition process; if left unchecked, the consequences are bound to be costly. ■

Taco Reus *is Endowed Professor in Global Strategy, Department of Strategic Management and Entrepreneurship, Rotterdam School of Management, Erasmus University.* EMAIL *treus@rsm.nl*

This article draws its inspiration from several recent papers including *Anchoring on the acquisition premium decisions of others* written by Shavin Malhotra, Pencheng Zhu and Taco H. Reus. The paper was published online in the *Strategic Management Journal* , 4 Sept 2014. DOI: http://dx.doi.org/10.1002/smj.2314

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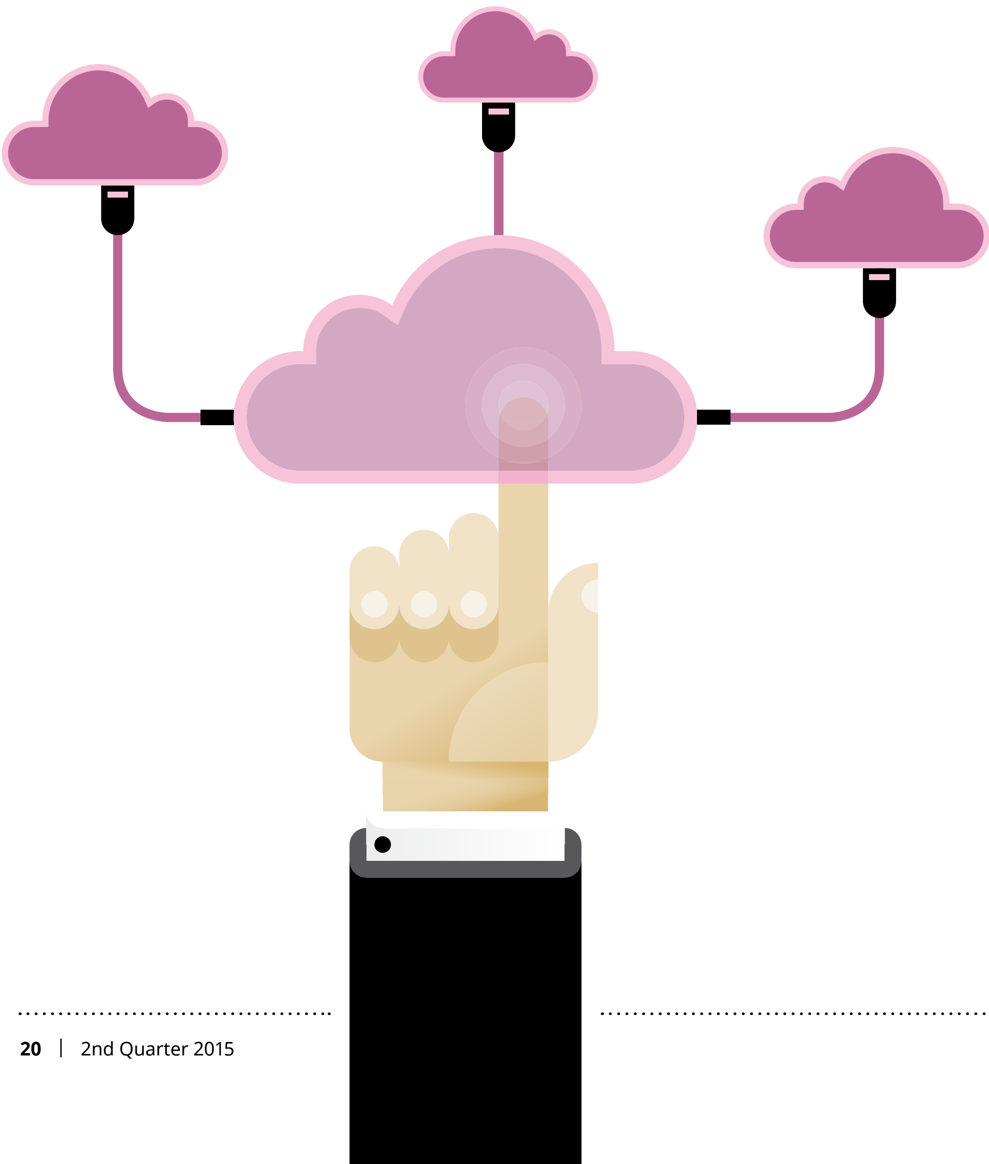
Cloud computing: pushing the right managerial buttons

By ***Saeed Khanagha***

Despite the obvious organisational advantages offered by cloud computing, not all firms have adopted and adapted to the rapid changes that this new form of remote data storage represents. Recent research and practice have focused on the issue from the perspective of firms as a whole, whilst overlooking the potential contribution of individual managerial practice and behaviour towards addressing the situation.



In the world of Information Computer Technology, it is an understandable misconception that all problems are of a technical nature. If a product does not function as expected, then the blame is generally laid at the feet of those responsible for developing the software in the first place.

Organisational theory has attempted to dig deeper into the issue by attempting to establish a link between the business and environmental conditions in which IT firms operate – responding to consumer needs is one thing but how should such projects be structured in the first place, before getting down to the technical nitty-gritty?

This has been a valid line of inquiry for some time. However, somewhere within the process the individual role of managers has been lost. Above all, in such a rapidly changing environment as ICT, involving proactive managers within flexible organisational set-ups has never been more important.

Current challenges

The current challenge faced by ICT firms is to integrate individual capabilities into an overall organisational process. This takes two forms – management innovation (the introduction of new processes, practices, and structures) and more wholesale business model innovation (the overhaul of methods for capturing and creating value). The extra challenge posed by the ICT industry lies in the speed of change and the extent to which firms may find themselves forced to adopt and adapt to major technical and non-technical developments.

Emerging cutting-edge technology can have implications not just for the industry itself but also market patterns. A network of partners is often required to work in tandem in the face of competition and for which the long-term payoff may require stumping up significant investment in the early stages in order to anticipate and subsequently meet user requirements.

It is for this reason that many ICT firms shy away from such ventures. The ability to accurately predict the success of a new product or platform, coupled with the volatile nature of the ICT business environment, doubles the stakes. Uncertainty is both an opportunity and a risk. It is at this point that the dynamic manager's ability to sense emerging technologies, seize opportunities, and align the overall operations of the firm becomes crucial.

Missing link

Until now, research has mainly concentrated upon the organisation and failed to link it with the cognitive abilities of individual managers. Whilst the adoption of emerging technologies is indeed an overall process, people are integral to the adoption and application of such processes and the potential impact on an overarching business model. It is by re-aligning managers within a more dynamic organisational structure that the link between customer orientation and innovation can be successfully made.

By re-centring innovative management within the overall firm approach, opportunities are created to incentivise venturing into new areas, apply experimental processes, encourage learning from failure, and even allocate resources in potentially risky areas. A recent four-part, four-year study into a selection of Dutch companies has helped shed light on this crucial window of opportunity.

Via a series of case studies and questionnaire-based surveys, up to 130 firms were tested and examined as to the methods employed in adopting innovation, the frequency with which they renewed their business model, the extent to which they exploited new ICT avenues, and their ability to sense and seize emerging technologies within the context of Cloud ICT.

The findings were mediated by such factors as process and routine, strategic intent, and managerial attention and innovation. The overall intention of the study? To establish the missing link between an organisation's desire and ability to integrate ICT innovation and the defining role played by individuals to make such a strategic intention a reality.

Dealing with complexity

The most revealing findings of the study are the micro-foundations of business capabilities, meaning from individual management above. What emerges most patently is the interrelationship of organisational characteristics and individual managerial capabilities and their potential to enable an effective response to environmental change. In short, practices, procedures and structures within the ICT industry are little or nothing without capable individuals to adopt and apply them. Moreover, such measures need to be applied underneath an overall strategic umbrella.

However, such organisational and strategic changes cannot be feasibly applied without a complete grasp of the in-house workings of the organisation. It is for this reason that ICT firms need to review the non-technical aspects of their trade before preceding towards the attainment of technical success. Involving managers within a flexible structure, where organisational design becomes a dynamic phenomenon in support of innovation (as opposed to a rigid obstacle to it), is key.

Another key finding to emerge is that of customer consultation. Whilst exploring initiatives may initially come from within an ICT firm, in such a rapidly changing, user-oriented field, it would be foolish to ignore the "word ▸

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Cloud computing: pushing the right managerial buttons *(continued)*

By ***Saeed Khanagha***

on the street". Careful and considered integration of customer expectations is therefore not to be neglected if ICT firms wish to achieve genuine technical breakthroughs with the expected market success that such achievements should bring.

Investing in innovation

The recent study highlights a major avenue for exploration and exploitation. ICT firms must learn to juggle the management of existing practices with the adoption of new ones – applying existing routines is no longer an option, nor is switching strategy in a knee-jerk reaction to the latest craze. Co-managing the not-very-old with the brand new represents a major challenge, one for which the most flexible and highly cognitive managers are required.

Be it listening to customers or involving dynamic managers in a more flexible process and structure, ICT firms should not be shy to adopt a trial and error approach to operations, in the interest of long-term gain. Termed the "soft side of innovation", this nevertheless represents an important investment in support of the eventual end product.

"Co-managing the not-very-old with the brand new represents a major challenge, one for which the most flexible and highly cognitive managers are required."

The main message is loud and clear – despite the very technical nature of ICT, firms operating within must be prepared to dedicate just as much time, energy and money to non-technical aspects such as management innovation and managerial cognition in order to increase the chances of success of the final result.

Heavy investment in technology and R&D is one thing, but if managers are not allowed to innovate and find themselves bound by the same old routines and organisational structures, then the chance to come up with genuinely new, ground-breaking technical solutions and products will be stifled.

Implications and directions

For today's ICT manager, the most attractive option is to be empowered to balance exploration with integration. Whilst the trial-and-error approach may generate short-term budgetary headaches for the firm, the opportunity it provides to test technical and non-technical ICT solutions can reap long-term benefits.

The aforementioned study insists upon the importance of exploring new technological initiatives within larger organisations where the temptation to stick with tried-and-tested solutions may be even greater. In all cases, the overall recommendation remains the same – rely upon your managers to support you in combining existing approaches with new ones and do not be afraid to experiment with different organisational set-ups in pursuit of an overall strategic direction.

From a research perspective, the issue requires deeper consideration per management level. The level of IT awareness must understandably differ from one hierarchical level to another, and therefore the contribution that each managerial level can make to the overall process. However, the overall theoretical and practical breakthrough is clear – no longer can ICT firms seek to branch out into remote fields such as cloud computing from a purely "group perspective". Each firm is only as good as the sum of its managerial parts and the structure(s) into which those parts fit. ■

This article draws inspiration from Saeed Khanagha's the PhD thesis *Dynamic Capabilities for Managing Emerging Technologies - Organizational and Managerial Antecedents of Effective Adoption of Cloud Computing*. It can be downloaded at: http://repub.eur.nl/pub/77319

Saeed Khanagha *is currently Assistant Professor of Strategy, Nijmegen School of Management and a senior researcher at Ericsson.* EMAIL *s.khanagha@fm.ru.nl*

RSM DISCOVERY - live links to authors and departments

Maarten Boksem
Assistant Professor, Department of Marketing Management & Erasmus Centre for Neuroeconomics

► **Email: maarten@boksem.nl**

► **Personal homepage**

► **Erasmus Centre for Neuroeconomics**

Marc Baaij
Associate Professor of Strategic Management, Department of Strategic Management and Entrepreneurship

► **Email: mbaaij@rsm.nl**

► **Personal homepage**

► **Department of Strategic Management and Entrepreneurship**

Cees van Riel
Professor of Corporate Communication, Department of Business-Society Management, and Director, Corporate Communication Centre

► **Email: criel@rsm.nl**

► **Personal homepage**

► **Corporate Communication Centre**

Rob Zuidwijk
Endowed Professor of Ports in Global Networks, Department of Technology and Operations Management

► **Email: rzuidwijk@rsm.nl**

► **Personal homepage**

► **Department of Technology and Operations Management**

Guido Berens
Assistant Professor of Corporate Communication, Department of Business-Society Management, and a member of the Corporate Communication Centre

► **Email: gberens@rsm.nl**

► **Personal homepage**

► **Corporate Communication Centre**

Taco Reus
Endowed Professor in Global Strategy, Department of Strategic Management and Entrepreneurship

► **Email: treus@rsm.nl**

► **Personal homepage**

► **Department of Strategic Management and Entrepreneurship**

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EDITOR-IN-CHIEF
Prof. Henk W. Volberda
(hvolberda@rsm.nl)

EDITOR
Russell Gilbert
(editor@englisheditors.nl)

RSM POLICY DIRECTOR
Wilfred Mijnhardt
(wmijnhardt@rsm.nl)

ERIM EXECUTIVE DIRECTOR
Monique van Donzel
(vandonzel@rsm.nl)

MARKETING DIRECTOR
Willem Koolhaas
(wkoolhaas@rsm.nl)

MEDIA & PUBLIC RELATIONS MANAGER
Marianne Schouten
(mschouten@rsm.nl)

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