The *Past, Present and Future of Information Management* Report

From a physical to digital information world – how the data revolution is driving competitive advantage
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Foreword

The one thing that is constant when we spend time with information management professionals is that their world continues to change. At LexisNexis, we feel a great responsibility to play a role in helping understand and navigate this turbulent environment.

The industry is being impacted by changes in technology, the growing volume of information, big data and the rise of social networks, meaning the role of the information manager is changing too.

LexisNexis has undertaken this report to help organisations understand the nature and impact of these changes. Here we analyse the past and present, and look ahead with the aim of equipping today’s information managers with the tools they need to succeed.

This report is based on in-depth interviews with senior information executives, supplemented by a pan European survey of more than 500 people working in information services; encompassing information professionals, researchers, librarians and market intelligence professionals. In this report, we refer to this diverse group as information managers.

We encourage information managers and their colleagues to read the report and compare its findings with their own experiences. I believe it reveals some interesting disconnects which, if not addressed, may have a profound impact on information analysis and delivery across organisations.

We hope you find the report an interesting and valuable read.

Tom Ogburn

Managing Director
LexisNexis Business Information Solutions
Executive summary

The volume and velocity of information is growing at an explosive rate. This, combined with the need to collate and analyse data for external and internal clients, is having a major impact on the role of the information manager.

The open internet and the growing influence of social and professional networks offer new opportunities for organisations. But with these come challenges – from information overload to the growing trend of self-search by those not trained in information management.

This report analyses today’s information environment and highlights the need for managers to move away from the role of facilitator to become consultants – and in doing so, deliver greater value across the organisation.

Key themes identified in the report:

Adding value. Information managers are under pressure to deliver critical business insight to their organisations. They are expected to drive new market opportunities across a wide range of functions to enable organisations to grow and develop.

Under pressure. Information departments are groaning under the organisation’s growing demands. Respondents were concerned about maintaining quality and accuracy while under pressure to respond more quickly.

Information overload. The abundance of information from an increasing number of sources is creating major challenges. This is particularly true for those tasked with tracking and delivering social media insight.

New skills. Communication is now seen as a vital part of the information managers’ skill set – complementing their existing analytics and database knowledge.

Visualise results. New approaches to reporting demand visual presentations and dashboards. Information managers,
however, feel that end users find it difficult to interpret the visual presentations.

**A physical past, a digital future.**

Web sources, including social media and online communities, are increasingly important tools in an information manager’s arsenal. A key challenge is how to extract insight from a wide range of sources in a timely manner.

**Recommendations**

Information managers face a demanding future. But there are opportunities to respond. The report offers recommendations to support information managers in their task to deliver competitive advantage:

1. Improve the speed and effectiveness of validating information from multiple sources
2. Focus on identifying key insights that will support the organisation’s objectives
3. Automate elements of the role using state-of-the-art tools
4. Capture the attention of senior executives by showcasing information in new and innovative ways
The capture and delivery of information has been driving competitive advantage, innovation and reputation, as well as risk management strategies, for decades. But not on the scale we see today.

Ten years ago information management was a more measured, less time sensitive task. Sources were often physical and had to be tracked down. Fieldwork and primary research were used extensively.

Fieldwork and physical libraries
Even relatively recently the roles played by our interview partners were characterised by scrutiny of reference materials, periodicals and trade journals as hardcopy documents.

Fieldwork was a regular requirement – whether that was an on-the-ground analysis of a potential new geography or a trip to the nearest high street to take a photograph of a competitor’s showroom.

Stefan Janzen, Research Analyst at MetaDesign explains: “I remember how I used to go to the library once a month and conduct research there. I even summarised some of the information by hand, when I couldn’t make copies. My colleagues had to do a lot more fieldwork than they do today, going out to take pictures of our clients’ shops, or those of competitors.”

Janzen calls it “playing detective”. Information was physical. To retrieve it you had to know where to look.
Chart one: Which types of offline and online resources did you use 5 years ago/do you use today to locate the information you need
From complex databases to intuitive research platforms
While non-information managers could find basic information, access to databases was limited to trained specialists. The complex nature of the databases demanded expertise to make sense of input, queries and output.

“The challenge then was to manage access using very sophisticated queries and to develop search methods for the most relevant information,” comments Anne-Marie Libmann and Véronique Mesguich, Co- Presidents at ADBS (L’association des professionnels de l’information et de la documentation).

The value of information management to organisations has grown. All of the respondents to the survey carried out by LexisNexis were quick to draw a line between the value of their teams today versus yesterday. Henning Heinrich, Vice President of Market Intelligence, T-Systems International comments: “Our services were considered ‘nice to have’ and the results of our work often ended up being filed away without really being used.”

Internet and social media as new sources and disruptors
According to Heinrich: “Just as there was less information from fewer sources via fewer channels, there were also fewer tools to help us in our analytical work. However, we were under less time pressure.” Heinrich’s views are representative: the internet and more recently social networks have had a significant impact on the world of information management.

Five years ago 17% of survey respondents used social media as an information resource. Today that number has more than tripled to 58%. Five years ago 20% utilised blogs in their daily information gathering activities. Today this has risen to more than 50%.

The historic mainstay of information management was the library. It has witnessed a drop of 12% in popularity over the past five years.

With chat rooms and networking sites increasing in popularity, information managers are not only becoming more virtual, they are becoming more collaborative too.
Present – analysing the issues

“What issues and opportunities did the survey uncover for information managers today? Firstly, the increase in the volume and velocity of data. There is more data to deal with and a greater demand from organisations to extract insight quickly.

Over the past five years an information manager’s use of social networks as source material has increased by more than 350%, blogs by more than 250% and RSS feeds by 200%. The study reveals that information managers have too many sources to monitor, are under pressure to analyse information quickly and feel increasingly overloaded by volume.

Accuracy is being questioned as volume and velocity increase. Organisations are increasingly self-searching for insight in what is being seen by some respondents as a threat to the information management sector.

Despite this, the role of information as a catalyst for competitive advantage is growing. Today’s information managers need to find a path through information overload – creating relevant, timely insight and putting it to work in strategic decision-making.

“From information provider to information analyst”
Growing volume and velocity
While the number of sources available to information managers is growing, so too is the overall volume of data. According to Twitter, more than 500 million tweets are now sent daily. For those tasked with brand or reputation monitoring, this is a crucial source. But keeping track of the sheer weight of content represents a major challenge – one echoed across all segments.

The much-heralded explosion of big data forces organisations to analyse millions of gigabytes of external and internal data to support business objectives. The information manager has an important role to play.

“Around 43% admit to being frequently pressed for time.”

Velocity has also accelerated: real time data capture and the growing demand from line of business colleagues for rapid analysis is putting pressure on information managers. Around 43% admit to being frequently pressed for time.

Increasing time pressure
The survey data shows information managers are inundated – not just by volumes of data, but also because of growing business demands. The chief issues encountered by information managers are too much to do (score of 6.98), too much information (6.28) and too many sources to monitor (6.24).
Referring to the increased need to quickly synthesise information (also rated very highly with a score of 6.28), Jos Leensen, Insights Consultant at Hill & Knowlton Strategies says: “Today a response is expected within an hour – and in the future it will be expected within five minutes.”

Responding to overload
How do today’s professionals respond to these pressures? Certainly, technology has a role to play. According to the survey, the standardisation of recurring tasks and the ability to automate delivers significant value.

Heinrich’s view: “We must structure and plan our work, employ the right skills and tools in each particular case, standardise our approach to recurring queries and regularly measure our performance on the basis of benchmarks.”

While standardisation of recurring tasks is critical, the opportunity to acquire new skills is equally relevant.

The ability of the information manager to analyse data remains as important today as it was ten years ago. Skilled statisticians are crucial. However, new skills are also an important part of the role. Information managers need to articulate results in a context and manner understood by their audiences. Building training around this and other key skills will help equip information managers for the next decade (as we see in chart four).

Chart three: On a scale of 0 – 10 (with 0 = not at all important and 10 = very important), rate the reasons you may feel rushed or pressured for time in your current job?

Information overload/overabundance of information  6.28
Too much to do/too many demands  6.98
Too many sources of information to monitor  6.24
Increased need to synthesise information quickly  6.28
Unpredictable working hours  3.69
Lack of suitably trained staff  5.00
Skills gaps in team members, including myself  4.71
Turning training into value

“Training and further education is essential to the career of an information professional. We can only remain successful through lifelong learning and by adapting to the rapid changes, which generally concern technological developments.” says Professor Ragna Seidler-de Alwis, Institute of Information Science, Cologne University of Applied Sciences.

Ongoing training enables information managers to deliver optimal value to both internal and external audiences. There is a strong move away from information as a ‘nice to have’ towards a business critical resource on which organisations can base strategic planning.

Today’s information managers are becoming ever more embedded into the business – a trend that is helping them formulate strategies to deliver corporate objectives.

Communication tops skills charts

According to the survey one of today’s most important skills is communication (score of 8.46). “Non researchers need simplicity,” says Erwin La Roi, Recruiter at Hatch. “I see a trend towards appointing people with strong communication skills.”

The importance of a reliable brief

Correctly judging a research request is the only way the information...
managers can be sure they are fulfilling the requirements. It means they can direct research and deliver results that are relevant. “When you receive requests for information, it is essential to determine what exactly the research question is,” says Jos Leensen.

Expert statisticians with sound analytics skills remain in demand. Today this needs to be combined with good communications skills and the ability to articulate results in a context and a manner that will be understood by their audiences. Libmann and Mesguich share this view: “What is important is listening to internal clients in order to fulfil their needs better, communicating in order to manage projects, and leadership qualities in order to shape dialogue with management”.

Volume, value or both?
Despite information overload and rising demands from stakeholders, accuracy remains paramount to information managers. For Heinrich, the ability to rapidly extract and condense essential information from a data pool, and deliver it to internal clients in an accessible form is crucial. However, he also points out: “We cannot neglect our quality standards, and must ensure we maintain the required levels of expertise.”

Erwin la Roi, specialist recruiter at Hatch, believes accuracy is declining: “Many information departments are being rationalised...people in other disciplines are looking for information themselves. The quality of work is declining.”

Impact on quality standards
Free internet search engines offer non-information managers an opportunity for fast desktop research. But, they present governance issues if sources cannot be verified or are attributed incorrectly. Such data is rarely as well-researched or relevant as deliverables coming from information managers. While the internet may have democratised information access, and user-friendly interfaces offer staff easy access to information, trawling the open internet for data is a grave concern for information managers.

Janzen is concerned about the tendency for people to “accept search results without considering the quality of the information.” It can be, he says, a curse if you don’t take time to conduct thorough research.

According to Sandrine Catonné, Director of the Research & Knowledge Centre and Sandrine Chailley, Head of Research Services at the consulting company Kurt Salmon: “The expectation among internal and external clients for a greater amount of added value is bringing about a change within the profession and has also made it especially necessary to more closely link the range of sources, whose quality and reliability are regularly challenged.”

Changing presentation methods
The presentation of results is also beginning to change. Dashboards, infographics and other visual approaches are becoming more significant as information managers deliver results in consumable packages for a wider community of executives.

“When using dashboards – be it from the point of view of their creators or their users – you must be aware that they can only offer a broad overview,” comments Seidler-de Alwis.

The move to mobility provides a further catalyst for results simplification – with smartphone and tablet users accessing their information from anywhere at any time.
The future – faster, smarter, more effective

“Information managers are driving competitive advantage”

Technology is set to play an even greater role in making information distribution more efficient as the range of corporate and market data continues to grow.

Multiple channels impact the ability of information managers to respond, while the use of free search engines in the quest for insight presents risks in terms of accuracy, copyright and ability to reference.

When asked about a future of increasing information overload, 51% of respondents believed they would not spend less time searching for useful data, with almost 60% fearing they would only have time to ‘scan’ information gathered.
Presentation changes
Information managers believe that they will need to spend more time helping colleagues understand results, need to present information in different ways for different audiences, and find new ways to present information to aid understanding – such as dashboards and visualisations.

The trend away from the information silo will accelerate – with information managers playing a more active role in the organisation, as well as in the development of its overarching strategy. An increased emphasis on communication skills and understanding the commercial environment will help information managers address these changes.

Chart five: If online information sources continue to grow, the impact of this will be that …
Information to increase over the next decade

Over the next 5 years [see chart six] information overload and multi-channel challenges will increase. Big data and social network data will be used in both customer-facing and back office operational processes.

With data volumes growing exponentially, information managers will need to analyse information quickly. This will put increased pressure on information quality and sourcing.

Time will also be constrained by the way the job is changing. Information managers will need to adopt new approaches and technologies to manage their workload.

Chart six: How challenging will the following factors be in the next 5 years?

- Growing need for job-related specialisms: 6.88
- Demand for multi-skilled professionals: 7.50
- Improving technical skills e.g., database management: 7.02
- Assessing the quality of information from conflicting sources: 7.64
- Impact of new technologies (e.g. social media): 7.47
- Storing and retrieving information: 6.93
- Demonstrating the benefits of your role to the company: 7.71
- Managing budgets: 6.37
- Measuring the benefit/success of your services to the company: 7.08
- Demand for quick results supported by analysis: 7.47
- Ability to quickly synthesise information in effective ways: 7.89
- Too much information: 7.05
Giving a voice to search

The sector looks set to enter a world of voice search, cross data validation and other technologies – increasing efficiencies and enhancing the information manager’s ability to deliver timely insight.

The Internet will – unsurprisingly – become more important (score of 8.00), but not only for freely available content. There will be more information online, but much of that will be locked behind paywalls (7.12). Similarly, the use of smartphones and tablets will become the norm (8.06) and will drive new ways of presenting data – above and beyond what we are seeing today.

With the standardisation of products and services, organisations are looking to intelligence and their information managers to deliver competitive advantage.

As Heinrich puts it: “Content is the raw material of the 21st century, and one that we need to secure long term competitive advantage.”

Chart seven: How likely do your rate the following technological advances

- Voice operated search functions based on natural speech: 7% Not very likely, 24% Not likely, 22% Neither not likely nor likely, 37% Likely, 9% Very likely
- Automatic cross validation of information I use from different online sources: 2% Not very likely, 11% Not likely, 15% Neither not likely nor likely, 55% Likely, 15% Very likely
- Spontaneous creation of useful documents from the information I gather: 3% Not very likely, 11% Not likely, 19% Neither not likely nor likely, 50% Likely, 15% Very likely
- Automatic translation of all online information I use: 2% Not very likely, 13% Not likely, 19% Neither not likely nor likely, 51% Likely, 20% Very likely
- Automated searching for the validation of rumour and sentiment-based online information which I use: 7% Not very likely, 18% Not likely, 30% Neither not likely nor likely, 37% Likely, 8% Very likely
- Automated rating of all online information sources which I use: 8% Not very likely, 24% Not likely, 22% Neither not likely nor likely, 37% Likely, 9% Very likely
“Content is the raw material of the 21st century, and one that we need to secure long term competitive advantage.”

Chart eight: Rate your level of agreement with the following statements

- The majority of online content will continue to be free and open access
- Demand for quality information and accuracy will decrease
- The number of online information sources will have increased
- The use of the free web will continue to be important
- Online sources providing opinions and sentiment will increase in value
- More content publishers will secure access to content via paywalls
- Dependence on mobile technologies for information access will be the norm
- The use of ‘Big Data’ will become a key basis of competition and growth for individual companies
- ‘Big data’ will be the foundation of my company’s business intelligence strategy
- The information you need will primarily be available via cloud-based services
Outlook by LexisNexis

The report shows information managers under pressure. Already being tasked to do more in less time, today’s professionals have to navigate four key challenges:

- evolution of role from information facilitator to consultant
- an explosion in data sources
- a more demanding internal customer
- a need to prove value to the organisation

Looking at the comments from interviews and the statistics from the survey we can draw some conclusions.

Firstly, the weight of work information managers are expected to handle creates a barrier to delivering sufficiently researched results.

Secondly, initial briefings from line of business executives can pose challenges at the front-end. A clear frame of reference is essential to enable information managers to identify and accurately query the most appropriate data.

Finally, when results are fed back, even in today’s more succinct dashboards, colleagues may not always have the skills or the experience to interpret them.
What then is the answer? Information managers – the experts in their field – should be consulted at the very beginning of a research programme to ensure the goal is achievable, timely and the output actionable.

Internal clients should have an understanding that extracting the essence from the mass of data can be a complex task – increasingly so as the volume and velocity of information is on the rise.

While today’s organisations run on information, many users choose to self-select from the open web, despite the fact that timely, accurate insight could deliver competitive advantages. Apart from the potential trust issues, this data is available to everyone – including the competition. It is not hard to see why such data rarely offers any value.

To gain the competitive edge for their organisation, information managers need to:

1. Validate information more quickly and effectively from more sources
2. Identify relevant information, particularly in reference to business objectives
3. Provide access to state-of-the-art tools and training to automate aspects of the role and continue to develop
4. Deliver information in new ways to capture the attention of time poor executives

LexisNexis is committed to supporting information managers by providing highly qualitative and relevant content that enables organisations to validate information from various trusted sources and match this to business requirements. Our aim is to ensure the delivery of truly personalised information – based on the client’s parameters and with full knowledge of their information objectives. This puts information managers in a great position to combine data sets to create a single, bespoke programme that is unique to the business – and available quickly to save time and effort.

LexisNexis’ research and monitoring solutions automate daily tasks and provide access to thousands of premium sources to leave the information manager with more time to gain insights into sources not available in the free web to add value to the organisation.

Combined with excellent user experience – be that for the information manager or their customers – in any given form of visualisation, whilst collecting, managing and analysing information can be a complex job, LexisNexis believes that information delivery should be simplicity itself.

It will be interesting to see the speed of change, and to track the evolution in information managers’ roles as we move into the future. One thing is for sure: LexisNexis will be there to support you whenever you need us to.
Appendix 1:
Results of the online survey summary

1. Please select your type of role

- Business development (24)
- Consultant (49)
- Communications (38)
- Information professional (287)
- Librarian (113)
- Marketing (17)
- Market intelligence (25)
- Researcher (66)
- Sales (15)

Legend:
- Information professional
- Librarian
- Consultant
- Communications
- Market intelligence
- Business development
- Researcher
- Sales

Languages:
- Netherlands
- French
- English
- German
2. How long have you been in your role?

- More than 7 years: 66% (German), 69% (English), 66% (French), 69% (Netherlands)
- 3 to 7 years: 18% (German), 20% (English), 24% (French), 20% (Netherlands)
- 1 to 3 years: 9% (German), 5% (English), 7% (French), 21% (Netherlands)
- Less than 1 year: 6% (German), 5% (English), 3% (French), 10% (Netherlands)
- N.A.: 1% (German), 1% (English), 1% (French), 1% (Netherlands)

Total: n = 533
4/5. Which types of offline and online resources did you use 5 years ago/do you use today to locate the information you need(ed)
6.7. On a scale of 0 – 10 (with 0 = not at all and 10 = very), how important are the following skills for your job today/in the next 10 years?
8. How frequently do you feel rushed or pressed for time in your current role?

- Not very frequently: 3%  
- Not frequently: 12%  
- Neither ‘not frequently’ nor ‘frequently’: 3%  
- Very frequently: 11%  
- Frequently: 32%  

Total: n = 533

9. On a scale of 0 – 10 (with 0 = not at all important and 10 = very important), rate the reasons you may feel rushed or pressured for time in your current job?

- Information overload/overabundance of information: 6.28  
- Too much to do/too many demands: 6.98  
- Too many sources of information to monitor: 6.24  
- Increased need to synthesise information quickly: 6.28  
- Unpredictable working hours: 3.69  
- Lack of suitably trained staff: 5.00  
- Skills gaps in team members, including myself: 4.71

Total: n = 457
10. On a scale of 0 – 10 (with 0 = not very useful and 10 = very useful), rate the usefulness of the following strategies to help you with time pressures in your current job.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardisation of reoccurring tasks</td>
<td>7.17</td>
</tr>
<tr>
<td>Synthesising information (e.g. via dashboards)</td>
<td>6.64</td>
</tr>
<tr>
<td>Acquiring new team members</td>
<td>5.75</td>
</tr>
<tr>
<td>Upskilling current team members</td>
<td>6.44</td>
</tr>
<tr>
<td>Implementing analytical tools</td>
<td>6.15</td>
</tr>
<tr>
<td>Outsourcing analysis and/or specialist activities</td>
<td>4.33</td>
</tr>
<tr>
<td>Using online information aggregators, e.g. news readers</td>
<td>5.85</td>
</tr>
<tr>
<td>Training</td>
<td>6.77</td>
</tr>
<tr>
<td>Acquiring necessary skills on the job</td>
<td>7.15</td>
</tr>
</tbody>
</table>
11. On a scale of strongly disagree to strongly agree, rate your level of agreement with the following statements. If online information sources continue to grow, the impact of this will be that …

- I will need to help others understand the outputs when I aggregate and synthesise the information I gather, e.g. dashboards
- I will need to help others understand how I aggregate and synthesise the information I gather
- I will need to present information in different ways for different audiences
- It will be important that I present information in ways that can be more easily understood by others, e.g. visualisations and dashboards
- It will be important that the context of the information I have gathered is clear, especially to others
- I will spend less time searching for useful information
- I will only have time to scan most of the information I gather or that is gathered by others

Total: n = 432
12/13. Considering your current job role, on a scale of 0 – 10 (with 0 = not a challenge at all and 10 = very definitely a challenge), how challenging will the following factors be in the next 5 years/10 years.

**Total: n = 419**

- **Growing need for job-related specialisms**
  - In the next 5 years (N=419): 6.88
  - In the next 10 years (N=380): 6.84

- **Demand for multi-skilled professionals**
  - In the next 5 years (N=419): 7.03
  - In the next 10 years (N=380): 7.50

- **Improving technical skills e.g., database management**
  - In the next 5 years (N=419): 7.02
  - In the next 10 years (N=380): 7.02

- **Assessing the quality of information from conflicting sources**
  - In the next 5 years (N=419): 6.49
  - In the next 10 years (N=380): 7.07

- **Impact of new technologies (e.g. social media)**
  - In the next 5 years (N=419): 7.47
  - In the next 10 years (N=380): 7.64

- **Storing and retrieving information**
  - In the next 5 years (N=419): 6.91
  - In the next 10 years (N=380): 6.93

- **Demonstrating the benefits of your role to the company**
  - In the next 5 years (N=419): 6.41
  - In the next 10 years (N=380): 7.71

- **Managing budgets**
  - In the next 5 years (N=419): 6.85
  - In the next 10 years (N=380): 6.37

- **Measuring the benefit/success of your services to the company**
  - In the next 5 years (N=419): 7.08
  - In the next 10 years (N=380): 6.01

- **Demand for quick results supported by analysis**
  - In the next 5 years (N=419): 6.64
  - In the next 10 years (N=380): 7.47

- **Ability to quickly synthesise information in effective ways**
  - In the next 5 years (N=419): 7.20
  - In the next 10 years (N=380): 7.89

- **Too much information**
  - In the next 5 years (N=419): 7.05
  - In the next 10 years (N=380): 7.05
14. Considering your current job role, on a scale of 0 – 10 (with 0 = strongly disagree and 10 = strongly agree), rate your level of agreement with the following statements. In the next 10 years...

**Total: n = 404**

- The majority of online content will continue to be free and open access: 5.50
- Demand for quality information and accuracy will decrease: 4.03
- The number of online information sources will have increased: 8.00
- The use of the free web will continue to be important: 7.82
- Online sources providing opinions and sentiment will increase in value: 6.61
- More content publishers will secure access to content via paywalls: 7.12
- Dependence on mobile technologies for information access will be the norm: 8.06
- The use of ‘Big Data’ will become a key basis of competition and growth for individual companies: 7.22
- ‘Big data’ will be the foundation of my company’s business intelligence strategy: 6.04
- The information you need will primarily be available via cloud-based services: 6.78
15. On a scale of not very likely to very likely, rate your level of agreement with the following statements. In the next 10 years, technological advances will enable...

<table>
<thead>
<tr>
<th>Statement</th>
<th>Very likely</th>
<th>Likely</th>
<th>Neither not likely nor likely</th>
<th>Not likely</th>
<th>Not very likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice operated search functions based on natural speech</td>
<td>31%</td>
<td>41%</td>
<td>15%</td>
<td>18%</td>
<td>2%</td>
</tr>
<tr>
<td>Automatic cross validation of information I use from different online sources</td>
<td>15%</td>
<td>55%</td>
<td>11%</td>
<td>15%</td>
<td>3%</td>
</tr>
<tr>
<td>Spontaneous creation of useful documents from the information I gather</td>
<td>15%</td>
<td>50%</td>
<td>13%</td>
<td>19%</td>
<td>2%</td>
</tr>
<tr>
<td>Automatic translation of all online information I use</td>
<td>20%</td>
<td>51%</td>
<td>13%</td>
<td>12%</td>
<td>4%</td>
</tr>
<tr>
<td>Automated searching for the validation of rumour and sentiment-based online information which I use</td>
<td>8%</td>
<td>37%</td>
<td>18%</td>
<td>30%</td>
<td>7%</td>
</tr>
<tr>
<td>Automated rating of all online information sources which I use</td>
<td>9%</td>
<td>37%</td>
<td>24%</td>
<td>22%</td>
<td>8%</td>
</tr>
</tbody>
</table>

Total: n = 402
16. On a scale of not very useful to very useful, if the technical developments listed below were available in 10 years’ time, how useful would these be in terms of your future job role?

Total: n = 398

- Voice operated search functions based on natural speech:
  - Not very useful: 8%
  - Not useful: 16%
  - Neither not useful nor useful: 28%
  - Useful: 29%
  - Very useful: 19%

- Automatic cross validation of information I use from different online sources:
  - Not very useful: 4%
  - Not useful: 7%
  - Neither not useful nor useful: 9%
  - Useful: 49%
  - Very useful: 35%

- Spontaneous creation of useful documents from the information I gather:
  - Not very useful: 2%
  - Not useful: 7%
  - Neither not useful nor useful: 12%
  - Useful: 43%
  - Very useful: 35%

- Automatic translation of all online information I use:
  - Not very useful: 4%
  - Not useful: 7%
  - Neither not useful nor useful: 15%
  - Useful: 43%
  - Very useful: 30%

- Automated searching for the validation of rumour and sentiment-based online information which I use:
  - Not very useful: 7%
  - Not useful: 14%
  - Neither not useful nor useful: 23%
  - Useful: 37%
  - Very useful: 17%

- Automated rating of all online information sources which I use:
  - Not very useful: 5%
  - Not useful: 8%
  - Neither not useful nor useful: 14%
  - Useful: 51%
  - Very useful: 23%
Cologne University of Applied Sciences, Institute of Information Science

Professor Ragna Seidler-de Alwis

(Germany – evaluation translated from German)

• PRESENT

Being a professor of business information and market intelligence at the Institute of Information Science at the Cologne University of Applied Sciences as well as having had a long career at a consulting firm, I can share many insights and assumptions from the interviews and the online survey related to the investigation of LexisNexis.

Based on the fact that many participants in the survey and interviews have been in their roles for longer than seven years, it seems to me that the added value of the role of information manager has been gaining recognition in quite a few companies.

Current research, changes in education and job profiles, and last but not least the information behaviour of my students also confirm the shift in the use of information sources, which has become evident in the survey’s results. Social media sources play a clear role in research. I think, however, that the increased use of social media and the noticeable abandonment of newspapers and magazines – at least by the first-year students – present a risk that individual opinions gain a disproportionate importance, while insufficient attention is being paid to the varying quality and reliability of sources.

On the other hand, the increased use of expert opinions confirms, in my view, that many information managers are overwhelmed by the flood of information, which drives them to seek expert advice. But is every person who keeps a blog on a given topic an expert? Or does being an expert not, in fact, have to do with years of experience in market research, associations, companies or industry journalism? Here we
must be able to make a distinction as to who is considered to be a proven expert and why.

In terms of the skills required for industry success, nowadays IT skills are indispensable to creating added value at a company. Information professionals must be able to select and use the appropriate analytical tools as well as database and knowledge management solutions effectively. These required skills are already reflected in current job titles. After completing their studies, many of my students are taking jobs as web analysts, SEO managers, database managers, knowledge management specialists or social media managers. The occupation of an information professional is gaining new and further meanings.

- PAST

What exactly characterizes the competencies of information managers has changed noticeably in comparison with the past. In the past, having a profound grasp of IT skills was not necessary to the extent it is today.

Without the massive information pool of the internet, information managers of the past had other challenges in obtaining information. Analysis and evaluation of the information has, however, not changed so much.

- FUTURE

I only partially agree with the survey’s finding that the stress factor for information managers will continue to increase in line with the growing information flood. Whether and how much perceived stress increases depends not only on the industry, but also on the task as well as the subject priorities. Already today, many IT tools, when properly employed, can contribute greatly to efficient and effective operation, whether in the field of distribution, processing or analysis. Prerequisites for this are the appropriate IT skills and the choice of the right tools.

The standardisation of repetitive tasks is also partly understandable, and in case of simple queries, possible, in order to relieve increasing stress levels caused by increased numbers of inquiries. However, in my opinion, this holds the risk that in-depth research will be done less often.

By the way, I see this risk in the expected increased use of dashboards as well. The creation of dashboards certainly corresponds to the change in our information behaviour. I see a rising tendency that many people will no longer take the time or have
the willpower to read long texts and will settle for superficial information. To be fully informed, that is, to have access to a wide range of sources with a considerable depth of information, is an important basis for strategic decisions. When using dashboards – be it from the point of view of their creators or their users – you must be aware that they can only offer a broad overview and are thus mainly suited to beginners.

I can see one further approach that would give the information manager more time for deeper analyses. The information manager could help his or her clients with individual requests, such as creating company profiles, independently but with the help of automated processes.

Lifelong learning is the keyword here when it comes to mastering the challenges of today and tomorrow. Training and further education is essential to the career of an information professional. We can only remain successful through lifelong learning and by adapting to the rapid changes, which generally concern technological developments. Learning does not end with the awarding of a university degree.

To my mind, another skill that will be relevant to adding value to companies will be assessing which information sources are important, and when to use the right ones. For example, when is a Wikipedia article suitable, and when do you need to complete a media analysis? When, and for whom, should you monitor social media sources, and when should you invest in an external market study to ensure a company makes the right decisions?

As information managers, we have to realise that the number of sources is continually going to rise. This trend is unstoppable. That’s why we need information professionals who are able to assess the quality of these sources in order to make an appropriate selection and thus ensure reliable information. Furthermore, this attitude must be ingrained into management and stakeholders in order to make it clear that high-quality sources require investment. This attitude must, and hopefully will, also emerge in the science sector, even if a large part of the research is financed by taxpayers and should thus be publicly available and managed cost-efficiently, such as through science portals and open access initiatives. The question that still remains is how irreplaceable, high-quality journalism will be financed. This can only be achieved when publishers introduce, as they will and must, stronger paywalls and other payment models. I am also afraid, however, that many businesses will increasingly expect business information to be available free of charge. We will see an increasing spread in the amount of information requested from and produced by information managers and their clients. Quickly-researched, inherently superficial information will stand in opposition to comprehensive, in-depth analyses. Many corporate employees will
increasingly resort solely to publicly available information and SEO (search engine optimised)-influenced search results. The idea that you will have to pay for substantial information, which carries its own strategic implications, will still have to prevail in some markets.

I therefore believe it is an important task to promote and to demand the mindset from my students that they look carefully at their choice and the value of their sources. Strategic business decisions will also depend on this core competency.
ADBS
Anne-Marie Libmann and Véronique Mesguich, Co-Presidents
Karine Cuney, General delegate

(France – translated from French)

• PRESENT

ADBS is the most important association of information management professionals in Europe. Founded in 1963, ADBS today supports 4,000 members throughout France. Our main task is to promote information management as a profession and to enhance the employability of people working in the sector by enabling them to further develop their skills and to keep pace with new challenges, particularly those concerning their job and role.

ADBS recently appointed a new leadership team consisting of experienced professionals, which is now pursuing a strategic vision for the development of the profession of information management. The main focus of the new leadership team’s attention is the development of jobs and active promotion of information management skills within businesses – and on a very large scale.

The development of the internet and servers has made an ever growing amount of information available to a large number of users, which is more readily available than ever. This demands radical advancement on the part of IM professionals.

This evolution of the profession must give rise to reflection about the skills that workers need in relation to access to information and data as well as to knowledge of sources and tools that enable them to access information as privileged experts. In the area of servers and aggregators in particular, professionals can apply their expertise to advantage in database queries and search methods.

The professional must furthermore defend the use of professional tools which, while they incur a charge, create high added value in their service to the business.
In this context, in which IM professionals must defend the costs of their services vis-à-vis the suppliers of content, i.e. the servers and aggregators, through their vital position within the value creation chain of information processing, it would be highly detrimental if the gulf that has opened over the years between these traditional partners were to widen. The hardening of attitudes that has developed in many relationships is a very regrettable development. It is high time to find our way back to dialogue in order to enable new types of cooperation and the development of synergies and harmony – and this is certainly in the interest of everyone, including the end users!

As far as the positioning of experts within businesses is concerned, their function must be raised up to the level of strategic and operational corporate policy in order to contribute more to added value, to become an integral part of the decision-making process, and to be at the centre of corporate operations. This investment at the strategic level of a business enables professionals to advance within the company and to bring their expertise to bear.

This new position entails a type of “mourning” for a position only based on expertise and technics and though, leads to changes in recruiting staff. Today, companies seek operational experts with knowledge of their profession whom they can then further train among others in management as well as information and data analysis.

From this point of view, the need for skills is focussed on project management, the analysis of data with added value, on consultancy and expert recommendations. Information management professionals are expected to have innovative, pro-active know-how. What is important is listening to internal clients in order to fulfil their needs better, communicating in order to manage projects, and leadership qualities in order to shape dialogue with management.

The biggest companies are setting up transversal platforms with a policy for information management, organisational audits and well-developed solutions for better meeting the strategic challenges of the business.

This far-reaching change will determine the policy of the ADBS over the coming years. A strong presence with members, who are the major players on the labour market and in the business world, is necessary in order to spread the word about the skills of professionals, their new role in the businesses and the necessity to rethink education and training. The presence of the ADBS in social networks has improved communication, especially with young people.

As part of this process, the ADBS is active as a lobby organisation at universities and schools, so that this new direction has an impact right at the start of education and training, which are sometimes too strongly anchored in the past. Education and train-
ing can no longer be limited just to the technical skills of the profession, but must also take the economic reality of the business into account.

This is a real challenge for the ADBS, which must raise awareness of the strategic challenges of information management among a wide variety of players, and which today is very heavily and dynamically involved in the battle for jobs!

• PAST

Previously, large information centres existed in companies or at universities – many more than today. Their central task was to seek out information inquired about by individual functional areas in the company or by management. From the 1970s onwards, they were assisted in this task by the first data servers, which were still imperfect and complicated to use. The challenge then was to manage access using very sophisticated queries and to develop search methods for the most relevant information.

The development of servers that are available to more end users of information and greater access to information via the internet have fundamentally changed the profession. The search for information has been strongly affected by this, so that a whole professional group must rethink its positioning and its skills in order to better fulfil the expectations of its clients.

• FUTURE

Fifty years ago, the services of the ADBS, for example in training and employment, didn’t exist anywhere else.

In an environment of extreme competition, in which the model of the association no longer has the same impact, the ADBS has to ask itself what role and which key areas of activity will still offer members added value in the future: knowledge transfer/employability, social tasks, communication etc. Dialogue with members is evolving and continues apace.

Maintaining an ADBS presence in businesses in order to understand their needs will be key to providing a relay and having something to offer professionals in information technology at the same time.

As far as IT professionals are concerned, their role is shaped by the marketplace. In order to survive, they have to keep moving and be attuned to trends. Anne-Marie Libmann closes now with this thought: “Help yourself, and the internet will help you!”
Appendix 3: Interviews with Senior Information Executives

Kurt Salmon

Sandrine Catonné, 
Director of the Research & Knowledge Centre

Sandrine Chailley, 
Head of Research Services

(France – translated from French)

• PRESENT

Kurt Salmon is a consulting firm for corporate strategies and change management. The aim of the 1,400 Kurt Salmon consultants (700 in France) is to help clients to align their strategic challenges with operational reality.

Made up of eleven people, the Research and Knowledge Centre is organised as a centre for shared services. There are two divisions: Research Services, whose main mission is to provide consultants with background knowledge on topics and external information with added value based on specific requests (hereinafter referred to as ad-hoc searches), and Content and Knowledge Management, which is dedicated to managing intellectual capital as well as activating the knowledge and expertise of the consultancy.

The main task of the Research and Knowledge Centre is to support consultants along the entire process from proposal preparation to the delivery of projects to the client by providing recent and pertinent information and by helping them to develop their own industry expertise.

In order to adapt itself to the changing nature of products and solutions in the market, the Research and Knowledge Centre decided to revise the structure and dissemination of one of its products: the thematic monitoring.
For two years, the team had been faced with increasing ‘infobesity’ and could no longer process the classic thematic newsletters that it was producing monthly at that time for consultants. This was in spite of having use of a tool to scrawl sources and generate newsletters automatically. The activity had become extremely time-consuming, both for the research analysts and for the consultants themselves, who could no longer take in the volume of information published.

The new format for information monitoring was at first intended for the follow up of key accounts at Kurt Salmon France, with the establishment of RSS feeds aimed at about 30 clients. Now, using the Kurt Salmon collaborative platform on a self-service basis, consultants can choose either to sign up for client RSS feeds or, if they are members of the key account team, consult alerts via a widget straight from the client community.

This approach has also been applied to thematic information monitoring, which enables the Research and Knowledge Centre to begin collaborating with the professional teams at an even earlier stage. The objective: to make joint decisions about needs (sources, titles, key words, etc.) as well as the frequency of publication and the kind of information feeds (RSS, widget within a community or push mail with a newsletter as an attachment).

This format is even more personalised and allows for co-production of customised information monitoring, which helps the consultants to stay completely up-to-date with current news from their market/sector, while being able to read the information when they want it. The consultants prefer to receive several very specialised, appropriate, short information feeds in terms of the number of articles rather than more general information feeds containing a number of headings, as was the case in the past. Mobile consultants also have to be able to access the information in a readable format on any terminal (PC, Smartphone, tablet) at their convenience. It is vital that the information is accessible but also secure.

The need for highly targeted information is also found in the ad-hoc searches carried out by the Research and Knowledge Centre in supporting the business approach and the customer delivery. Now more than ever, both consultants and clients are looking for very precise information and quantitative data, such as data about market segments or performance position benchmarks.

The expectation among internal and external clients for a greater amount of added value is bringing about a change within the profession and has also made it especially necessary to more closely link the range of sources, whose quality and reliability are regularly challenged. A specialisation for research analysts is also proving to be...
essential so that they can address topics that are increasingly specialised and within ever tighter deadlines.

• PAST

Up until two years ago, the Research and Knowledge Centre produced information feeds in the form of thematic and generalised newsletters. For the team, the work involved deciding on topics and researching the most pertinent information in order to provide personalised information feeds to the consultants with respect to their area of specialisation. Although these summaries were found to be helpful, the production of these newsletters was becoming increasingly time-consuming due to the multitude of sources monitored and a volume of information that only continues to grow.

• FUTURE

Researching information is becoming more and more specialised. The main issue will be to find high-quality information within the ‘infobesity’, explain it, cross-reference it and even challenge it.

The demand for information with added value necessitates 360° insight into an ecosystem: trends, competitors, product innovations, best practices, successes, failures, etc.

To truly fulfil their role as a “middle office” and support teams of consultants, research analysts must continue to be part of the process of providing customised service by reacting quickly and flexibly while, above all, being experts in processing and cross-referencing information in order to contribute to the standard of excellence that makes Kurt Salmon attractive to its clients.
Roquette

Françoise Vernon,
Information Department Manager

(France – translated from French)

• **PRESENT**

Within the Information Department, I am responsible for information activities, such as monitoring and providing the informational analyses to internal customers about scientific projects and competitors. My duties also extend to crisis management when I have to organise thematic monitoring to provide the relevant information that helps our management to take the relevant decisions. I’m also involved in information engineering which includes participating in technical projects (collaborating with IT) related to technological developments. Finally, I am also responsible for information management.

The Information Department serves the needs of our internal customers and the strategic markets sought which are food, feed, nutrition, health and consumer and capital goods. Since our customers require relevant and in-depth information, information monitoring specialists have a scientific background. However, in our experience, it can be difficult to get a clear brief from our internal customers of precisely what they are looking for.

Our team regularly produces many deliverables, such as tracking specific scientific topics (including patent landscape), creating newsletters or reports with market information or marketing newsletters based on news content. Within the Marketing Department, some dedicated experts create “flash marketing” deliverables that consist of analysed content and which are targeted other Departments and the Board. This means that the Information Department’s team members need a high degree of specialisation in terms of different segments, industries and topics.

For providing the deliverables to its internal clients, the Information Department use internally sourced information. This is information that is collected from feedback from the field force. Then, we make extensive use of externally sourced information. This comes primarily from databases or subscription-based publications.
One challenge we face is that legal restrictions prevent us from sharing information as broadly as we would like to.

Other challenges include ensuring that the team’s skills and expertise remain aligned with Roquette’s strategy and developing competences with limited resources. We also need to better highlight our overall business impact. It is a fact that the Information Department has been instrumental in securing business deals and avoiding risk exposure.

**PAST**

Just ten years ago, Roquette was not the international group that it is today. We worked on fewer projects and had not yet begun to study microalgae and pea, for example.

And, of course, we mainly tracked paper information.

**FUTURE**

In keeping with our global strategy, the main objective for the Information Department will be to extend its reach to Roquette Group. This will include monitoring key topics in China or other evolving markets.

I also envision the Information Department becoming a part of a bigger Information Division within the next five years. This will include a Prospective Department in charge of trends analysis and forecasts, as well as records management (archives management).

The role of the division would be to centralise processes to better meet internal customers’ needs. This would also be an effective way to optimise workflow information within Roquette, ensuring, for example, that prospective topics are included in the news monitoring workflow and properly archived.
Universcience

Olivier Roumieux,
Head of the digital library service

(France – translated from French)

• PRESENT

The digital library service was created in 2008 as part of the Bibliothèque des Sciences et de l’Industrie – science and industry library (BSI, Cité des sciences – Universcience, Paris). It is made up of eight people, each of whom is trained in information/documentation. Some also have additional scientific training. The digital library has two purposes: to produce online content and recommendations for developing the use of our paper and electronic resources, and to inform as broad a public as possible about the scientific heritage of the institution via the digital library, Scientifica.

Olivier Roumieux became head of the digital library in April 2012, bringing his extensive experience in information management that he acquired from previous positions: ADBS, the professional association for librarians and information professionals in France (in charge of multimedia editorials); Documentation Française, the French public publishing service (website administrator); the professional journal Archimag (journalist); Serda Group (consultant/trainer); and the library of the École Polytechnique higher education institution (librarian).

The library’s current role is to be an effective means of relaying sources of information available to the public. To do so, it has a collection of approximately 120,000 documents – books, digital books, journals, films, CD-ROMs, DVDs – within the fields of science and technology. The public can also consult certain specialised databases, such as Techniques de l’Ingénieur (engineering/science) or EM Premium (medical/scientific).

The digital library service also produces its own materials, such as documentary reports or reviews of current affairs, making use of the collections available to the public and via open sources found on the internet. The digital library also provides

1 This contribution represents a professional opinion. The management of the Universcience establishment takes no responsibility for the content.
recommendations, either in the form of thematic selections or by extracting ‘snip-pets’ from new arrivals, which is done in collaboration with all of the librarians.

However, the website is no longer enough, and the Bibliothèque des Sciences et de l’Industrie is committed to moving towards disseminating its content through social networks, as other libraries are doing. Since the nature of online services means that physical boundaries are no longer an issue, the idea is to concentrate on all the virtual spaces in the search for internet users who would be likely to use the collections and services of the library.

The tools of ‘digital mediation’ are reviewed (competitions, co-creation of content, etc.) and must allow us to go beyond simple institutional communication in order to put libraries back at the centre of the process of transmitting and sharing knowledge.

• PAST

Until a few years ago the library was seen in its traditional role of transmitting information and knowledge to the public at large, but it did not really understand the nature and, above all, the expectations of this public. Due to its considerable collections, the library naturally holds a monopoly of sorts in relation to the general public, especially in terms of researching scientific and technical information as regards BSI. This situation is of course being challenged by the democratisation effected by the internet.

• FUTURE

One of the main challenges for libraries in the future is to have a better knowledge of who their public is (children, families, professionals, researchers, retired people, etc.) in order to better adapt their offerings and services to very diverse demands. Thanks to new online tools such as social networks, this knowledge can be particularly detailed. However, the real test will be to refocus the library’s strategy from supply towards demand, while still providing a uniform public service that does not give in to the temptations of particularism and other forms of communitarianism.

As a result, it is possible to imagine services with reserved, sponsored or even fee-based access, although this broadening of the economic model should take place without losing sight of certain fundamental issues (providing information to the greatest number of users, technological neutrality, etc.).

Increased proximity to the public will be reflected in the design of libraries, which will have to offer different areas (rooms, large tables, individual booths or cubicles for
groups, etc.) and environments (silent, quiet, loud, etc.) that are designed much more for different usage (studying, research, leisure, socialising, etc.).

In the future, in situ and online requests will be closely linked and users will move logically and with ease from one tool to another, from paper to digital resource in a natural continuum.

Since expertise is no longer the reserve of the traditional experts who are well represented in the documentary collections, but is now also diffused via the Web, the library must be much more open, but also stringent, in the process of selecting and approving sources.

With this in mind, one of the challenges of the library will be to develop its advisory role against the overabundance of information coming from the internet and social networks. Without being a substitute for school, the library has an educational role to play in terms of information literacy: researching information, qualification and cross-referencing of sources.

Libraries will certainly have to assume a leading role by concentrating on more open sources, for example, with a lesser emphasis on others that may have ownership attached and therefore be difficult to share. Libraries will continue to provide the greatest number of users with access to resources with a high level of added value, such as specialised databases.

If all goes well, the library of 2025 will have succeeded in finding the balance between on-site and distance access and in the opening of its physical and virtual collections, as well as developing numerous services aimed at user communities that are better defined and therefore more relevant for them. In short, the library will be the place to be for managing and developing your knowledge.
MetaDesign AG

Stefan Janzen,
Research Analyst

(Germany – translated from German)

**PRESENT**

As a research analyst at an international identity and branding agency, I am responsible for ensuring that my colleagues in the consulting and creative departments receive all the information they need in order to advise clients. As the job description implies, I don’t just deliver the information, I also analyse and evaluate it.

When observing the competition and conducting trend research, we have to recognise and understand how our clients’ industries are developing and which overarching issues, for example social media, are affecting how companies manage their brands. We have grown out of the role of simply providing information – our expert knowledge offers our clients recognisable added value.

Correctly understanding the research requests of our colleagues is a major challenge of the job. In order to deliver relevant results, and to fulfil clients’ requirements in terms of content and format, we must direct the research briefing accordingly. That is the only way for us to deliver results that are relevant to the target group.

As the majority of the data that is relevant to us today – for example, images – can be accessed online, we are experiencing an abundance of information.

That is a blessing when we need information about the most exciting trends. They are easiest to identify when our research is global because new trends that we want to follow are emerging particularly in BRIC countries. However, it can also be a curse if you don’t take the time to conduct thorough research. It has a huge impact on the quality of the results.

It is our task to bring order to the chaos of information. We cannot be content with superficial results and must ensure that our research is both targeted and comprehensive.
To achieve that, we need the right tools; ones that allow us to impose the necessary filters and help us avoid dead weight.

• **PAST**

While, today, almost all the information we need is available online, in the past the researcher had to play the role of a detective. You had to know where to look. You had to know the right retrieval language to use with every database. The search for international high-quality information was particularly difficult.

I remember how I used to go to the library once a month and conduct research there. I even summarised some of the information by hand, when I couldn’t make copies. My colleagues had to do a lot more fieldwork than they do today, going out to take pictures of our clients’ shops, or those of competitors.

Collating the results also took a lot more work.

• **FUTURE**

I imagine that, in the future, we will have very different ways of accessing databases and other information sources. We will search using natural language, and will be able to access the results in, and adapt them to, a variety of locations, without being limited by the computer screen.

The tendency of some people to accept search results without considering the quality of the information or its source may increase.

However, MetaDesign’s quality standards will remain the same. Because the quality of our analysis represents added economic value for our clients.
T-Systems International GmbH

Henning Heinrich,
Vice President of Market Intelligence

(Germany – translated from German)

• PRESENT

The Market Intelligence division creates added economic value for T-Systems International. All of the requests for research and analysis submitted to us by other areas of the company must demonstrate a “ROMI” (Return of Marketing Investment).

Managing our division to ensure that processes and points of contact are working effectively, and that personnel and tool-supported resources are being used effectively, is an essential part of my work.

In order to be successful, and to be able to generate added value for the company, my team and I must always keep abreast of the latest developments. We must stay informed about the decisive trends and changes in the market, whether they are technological trends, such as the cloud or big data, IT industry trends or trends that affect the strategic positioning of our competitors.

One of our key challenges is managing the abundance of available information. The increasing information overflow has had a huge impact on the way we work. We must rapidly identify the essential information in an immense data pool, condense it and provide it to our internal clients in an accessible form, one that is suitable to the target group.

We are also receiving a rising number of increasingly specialised requests, which we must process, interpret and explain under steadily growing time pressure. We cannot neglect out quality standards, and we must ensure that we maintain the required level of expertise. We can only meet these challenges by working in a highly efficient manner. We must structure and plan our work correctly, employ the right skills and tools in each particular case, standardise our approach to recurring queries and regularly measure our performance on the basis of benchmarks.

Employing the right tools and applications saves us time and allows us to work more
efficiently. That is why we must always be aware of the state of technological development and ensure that we employ state-of-the-art tools that help us achieve our aims.

**PAST**

A clear difference to our current way of working is that, in the past, our services were often requested without the added value for the company being recognisably demonstrated. They were considered “nice to have” and the results of our work often ended up being filed away without really being used.

And, just as there was less information from fewer sources and via fewer channels, there were also fewer tools to help us in our analytical work. However, we were under less time pressure.

**FUTURE**

In the future I expect that our clients will demand that our work meet ever higher quality standards and that the volume of requests for analysis, and the speed with which we must meet them, will increase considerably.

For us, as market intelligence experts, it is becoming ever more important that we identify the essence of the information we work with. That naturally has consequences with regard to the skills we require in our employees. More than ever, our staff will have to be more than just experts on one topic, industry or region. Instead we will have to continually develop our analytical and communicative skills in order to meet the challenges presented by complex new topics, and to allow us to explore them more intensively. This assumes that we will be able to identify relevant information even more quickly, and summarise it in ways that draw attention to the essential issues.

We will continue to source information from the internet and social networks, but will only use them as complementary data sources. The flood of information will continue to grow, information channels will become more focused and we will need better tools for data analysis.

In my view, content is the raw material of the 21st century – one that we need in order to secure long-term competitive advantages for our company.
Dr. Bernhard Mittermaier,  
*Head of the Central Library*  

(Germany – translated from German)

**PRESENT**

Since 2008, as Head of the Central Library at the Forschungszentrum Jülich (Research Centre), I have been responsible for ensuring that our customers are supplied with the professional information and literature they require.

A clear focus of my responsibilities is ensuring that our researchers have access to the information that is relevant to them, in the form of various publications, books, periodicals and databases. That requires us, as information professionals, to build a strong network of contacts with professionals in the various specialist areas we serve. That is the only way for us to understand which topics are essential to researchers, both in the present and near future. That is why we also work closely with other scientific libraries and our clients, so that we always have our finger on the pulse. If we know how scientists work and what they are working on, it allows us to tailor our services precisely to their needs, such as by providing electrochemical literature to a newly founded institute for battery research, for example.

Selecting the right tools and databases helps us in our work. We have seen that the better we explain the uses and added value of tools with respect to their work, the happier researchers are to make use of them. That applies to internal databases, such as library catalogues, as well to databases of external providers, etc. Our clients in particular, who have to be extremely thorough in their work as researchers, quickly recognise that they cannot achieve the required depth of information using freely available search engines.

We no longer think of ourselves as just information facilitators. A large part of our role is to offer our customers our professional expertise, to give them individual advice and to help them find the required information and facts using the research tools at their disposal.

That is how we contribute to the work of the research centre Forschungszentrum Jülich.
• **PAST**

In the past, research was more complex for us and our customers. We had to know more retrieval languages such as Messenger. That is why it was vital for us to continually improve our knowledge in this area and offer comprehensive research training.

It was not until browser-based access and interfaces were introduced that research became simpler for non-information professionals and the intensity of training could be reduced.

• **FUTURE**

As far as the development of user interfaces is concerned, I expect that they will become increasingly intuitive.

The increasing communication between communities of researchers is a significant trend in information management. Literature management programs such as Mendeley and sharing platforms such as Research Gate, among others, will become increasingly popular.

The entire publishing system will be transformed. This will have profound effects on the library system. In the future, I expect 90% of information to be open access.
Dutch House of Representatives

Jan Keukens
Head of the International & Spatial Domain of the Department of Information Services

Gert-Jan Lodder
Head of the Department of Information Services

(Netherlands – translated from Dutch)

• PRESENT

Gert-Jan Lodder has been head of the Dutch House of Representative’s Department of Information Services for four and a half years. His team is made up of a total of seventy full-time and part-time employees in six departments. Of his seventy team members, forty are information specialists, representing three different domains: International & Spatial, Administration & Education, and Social Affairs, Economics & Finance. Jan Keukens is head of one of those domains (International & Spatial). There is a front office and a back office. The front office takes all questions (8,000 per year, most from the House of Representatives). The back office makes a selection from the available information. They refine the information and draw up products, such as files. They also answer the questions that require more time. Keukens explains: “We see questions here on every subject that society is concerned with. Everything in parliament revolves around information. There’s an overload of information; part of our job is filtering and refining it. We add the context to files. The House conducts its meetings based on parliamentary documents, policy memoranda, or a legislative proposal, and we provide the societal context. What are they saying about it in the press? But we also offer primary information, such as scientific information. We have a focus on traditional information: media, science, case law. And social media is starting to become relevant. We follow social media, whether it’s positive or negative, the volume, etc. It’s very important in everything we do for us to indicate the direction, to not just give one opinion, but multiple opinions. The party groups themselves shape their story based on their own political leanings. We produce 130 long-running policy files, as well as readers. Our products are neutral. We ourselves have no opinion.
Past | Present | Future

about, say, the Fyra issue. Our client comes to us and asks for what he wants – positive or negative reports about Fyra. There are eleven party groups, all with different opinions, and we serve them all. It’s critical for us to keep asking questions, because people often don’t know what they want. With our expertise, we can provide more, and offer more options. The house members have personal staff, who are generally the ones that come with an information request. That in itself generates some noise, so asking the right follow-up questions and giving and getting feedback is essential.

We have a physical front desk below the Plenary Meeting Hall; people can go there with their questions. A lot of people also telephone; direct interaction is important.

We are seeing that the demand for current information is rising. The flip side of that is that quality takes time, but when people need information from us, they always need it fast. Our challenge is to make information available faster. There’s also an increasing demand for specially tailored information. Even though we like to keep our offerings broad, people want very direct answers focused on their exact framing of the issue. When you look at the government as a whole, with the size of its budget and the number of public servants it has, the House of Representatives is actually a pretty small operation. Our research office has fifteen people. We have an increasing need for hands-on support to be able to function as a counterbalance to the government and to carry out our assessment role properly. That’s part of what people look to us for, along with the research office.”

Lodder continues: “Functional, technical and substantive management is an essential task of ours. Combining information from different places and different sources is a challenge. You’ve got information from the government, from meetings, from the media, from the internet, from scientific research... there’s always more information, in more and more systems. The question is how we can keep all that information available. A paper archive, like you might imagine from the old days, is not at all a realistic option any more. We want to keep the information transparent, so that users can find it themselves.”

Lodder explains that people can run simple searches themselves. For the more complex searches in multiple sources, they go to the Department of Information Services, as they do for nested queries, a primary question with a number of additional sub-questions. “As long as the House is in session, we’re there too, sometimes until two in the morning. We’re a meeting support service, active right up until the end of the meeting. Just like the cafeteria, the security, the technical support.”

Keukens says that what the House is primarily interested in is opinions. “When we go through newspapers and the internet, we’re looking for statements of policy officials and parliament members, but also just opinion-makers in general. What are
Greenpeace and Friends of the Earth saying about it? Public opinion is an important dynamic, and it can change from one moment to the next. What we are there for, first and foremost, is to supply the facts. The statements from people in the know, from experts, authorities, official organisations.

The most important sources for us are parliamentary sources and documentation of the proceedings in the House. We want to be able to find all that again in twenty years, so what we need to pay attention to is linking, indexing with metadata, and establishing references and cross-references. Science and scientific journals are an important source for us, as is the media, of course. One thing we do, for example, is watch television programmes again. We ascribe more value to newspapers than to an internet source. If someone like the Dutch diplomat Ben Bot has a letter in the NRC, we grab it. But if someone influential says something on the internet, we want to save that too. With web sources, a link is not enough for us; we have to capture the actual article.

The consumers of our information are MPs and their staff; that includes information directed towards the public. We help anyone with a question about the parliamentary process or the status of a legislative proposal. Or things like: Where can I find the parliamentary documents, or when is a subject on the agenda? The parliamentary press also uses our services. We have a vested interest in a functioning and well-informed press. And we help lobbyists, and academics writing about parliament. We help ensure that the House of Representatives is transparent, and stays accountable.”

• PAST

Keukens studied information sciences and then went to work for the University of Groningen. “I started in the House of Representatives as a documentalist. At the time, I was surprised by how important the press was; at university, it was all about the truth, about science. Here in parliament it’s about the media and journalism. After two years, I was head of the library. At that time, the documentation service was separate. The library had books, reports, jurisprudence, and legislation, and the documentation service had press and magazine documentation and a parliamentary documentation section. In 2001, the documentation service and the library were merged.” Keukens joined the service in 1998. “At that time, there was still a card catalogue, but it went electronic fairly quickly. And there were only two computers for the whole department. We had data typists on the staff. Way back in 1978, there was already a database with parliamentary documents, manuals, and press articles. That database was not easy to maintain.” Before that time, they used still other methods. Like back then, you had the ‘wet copy’, Keukens explains. “Then you went to the copy
service, and they made your copy and hung it up to dry. You could come and pick it up at the end of the day. After that came the fax, that was something else again.”

Lodder studied at the BDI, the college of library and documentary information. “After my studies, I became a consultant for a commercial firm that worked for government agencies,” Lodder explains. “Then I went to university and got a degree in Information Management, and I built up a little network of consultants. Soon after that, I started at the Ministry of the Interior.”

Lodder recalls that the House of Representatives has always been a fairly early adopter of new technologies. “We have a lot of material electronically, and we were generally ahead of the crowd on the technical side. But we also have a lot of technology that we’ve had for so long that it can’t really be called modern at this point. That’s something we could definitely improve.”

**FUTURE**

Keukens and Lodder expect to see changes in the future in a number of different areas. “We expect that knowledge of information technology, language technology, and structuring queries will become more important. With today’s volume, even more will have to be digitized, and that will make high-level queries – with wildcards and operators in the right places – easier. As part of this, we think that the knowledge of the tools will increase. Right now, that knowledge is in the Bureau for Information Management, but we think that the information specialists will have to gain this knowledge themselves. And we also think that the specialists’ understanding of the various subjects will have to improve. We have always looked for specialists who gradually specialise along the way, for instance becoming an expert in European Union matters. We do think that for the time being, we will have to stick to specialists with an information sciences background.” Keukens sees young people as more in touch with the new technologies and new media, while Lodder adds that the study of the field, and the knowledge and expertise that that brings, remain important. “I’m all for retaining acquired skills. If you know how to compile a thesaurus, you can apply that knowledge to indexing with metadata. The House of Representatives is relatively traditional as an organization, but when changes like flexible working or the “New Style of Working” movement come along, we also make changes in how we organise. We’re going to see that happening in the next twenty years.”

Social media and websites will be playing a bigger role. “Right now, we are much more likely to save a newspaper article than a website,” Keukens says. “But is that going to still be the case in ten years? Will there still even be newspapers?”
On social media, we believe that it is our role to give MPs the tools to let them follow the opinions of their base themselves. We set up the tools, and they use them. We will help the user stay afloat on the rising tide of information overload.

If changes to the parliamentary process happen, social media can play a role by giving the people in the country a direct influence on the process. This is a part of what we call the participation society. You can already see that the House is having more public hearings and roundtable discussions, particularly for special interest groups and authorities on certain subjects.

The advice we would like to give to people going into the field is to make sure you’re good with software and systems, but you also have to be a good communicator. In the end, it’s still people work, it’s not something for someone who’s a pure techie. You need a broad, general background and a historical perspective to handle all the requests we get. You need to be able to hear the clock striking, but not necessarily know the exact position of the pendulum. Well, maybe which direction it’s moving...

We think that whoever is doing this job in twenty years will be called an ‘information specialist’. 
Hatch

Erwin la Roi,
Recruiter

(Netherlands – translated from Dutch)

• PRESENT

I have been a recruiter since 1998 and have been active in the field of information since 1993. I see three roles in this field: the administrative role, the research role and the role of consultant. The administrative role centres around maintenance. This person is responsible for setting up and managing a document management system (DMS), for instance. The research role is often a communicative role. Researchers are people with metaphorical antennae, and they have to be able to communicate internally and externally. The consultant is occupied primarily with advice and projects concerning matters such as knowledge management.

The administrative or archiving role has taken on a digital form. In the past, people in this role were predominantly active at the end of the chain, in the archive. Today they are positioned within an organisational workflow. They have to demonstrate their role and value, be familiar with the technology and communicate more with the various stakeholders. In some cases this is a change compared with the past. They have to immerse themselves in systems and classify things. But they also have to be able to set up a document management system, manage it, train users, resolve issues, etc.

For the researcher, there is a change in the sense that there are more documents and resources. Whereas they were formerly the gatekeepers of the dataset, they are now seeing themselves being passed over, and people within other departments are taking out subscriptions themselves. Researchers need to redefine their added value. It is more than being able to search for information, because searching is no longer difficult. Validation and being able to indicate relevance are now essential. These are two aspects that the researcher can contribute. Validation is essential in order to ascertain whether one resource offers more value than another. Knowledge of sources is also essential; this is the added value that a researcher can bring. Researchers listen well. They might not always communicate a lot, but they can pick up things well through their ability to listen. Tools for the distribution of news through-
out the organization each day are popular. They boost the visibility of what research can provide.

I see many information departments being rationalised. There are only half the job vacancies that there were three years ago. People in other disciplines are looking for information themselves. The quality of the work is declining, but it is not an issue if the people concerned don’t notice. There often used to be a central information department. Now we are seeing that the task is being absorbed into the various departments. Vacancies are appearing in other places; however, which is very nice to see.

You end up with different types of people in the profession. For example, in research we are seeing more academics who have been trained in a particular sector, such as someone from Wageningen university specialising in agriculture.

Consultants are usually external people who provide advice on the introduction of software, a DMS or a CRM. They always work in a project-based manner. There are around a dozen advisory organizations active within the field of information in the Netherlands. Information professionals work within these organizations; they think in terms of structures.

One current trend or development within the field is Big Data or Open Data. You can combine different types of data creatively. If I worked within an organization right now, that’s what I would focus on.

The influence of technology has been huge. A smaller group of people can deal with a larger amount of information, use more sources simultaneously and examine sources more quickly, and there is also much more information available. Too few information specialists take on social media. However, they are well equipped to do so. Working at a computer suits their character. They have a strong textual focus and are often quick and skilful with language. With social media, they can also communicate and respond more ‘safely’. There is still a world for the information professional to conquer.

I personally have trouble with discovery tools. I find them too generic and too practically focused. But there is a big difference in value between a university dissertation and an article in Elsevier magazine. A different technique needs to be used for each of these, but then there are too many search options. Sometimes it’s a matter of finding a balance between quantity and quality.

Technology is a commodity. Searching in databases is easy everywhere. The interfaces differ, but it is just a matter of getting used to them or a matter of personal preference. Non-researchers need simplicity. A simple Google-style bar is what this group wants. Information is also becoming a commodity, partly through Open Access.
creative spirit is required to combine all the new information available in a creative manner to end up with valuable information. Within the industry, the focus is more and more on people. That makes the difference. Events in this field are now increasingly focused on profiling yourself and putting yourself in the spotlight.

Successful people in this industry are communicative and can associate easily with everyone in the company. I see a trend towards appointing people with strong communication skills, even if they have less experience or do not have specific training or education. If you adhere to the corporate philosophy as an information professional, you bring value to the company, and this value is seen and appreciated. Information professionals can still make gains in this regard.

• PAST

I started out as an Information Broker, at the time working primarily for the advertising industry and the consultancy sector. It is mainly generalists who work in those fields. For pitches, they need a lot of information about the market, the competition, the trends, etc., within a short space of time. Generalists may well be able to find something, but access to databases was limited back then. My role was to work on a directly usable response to the request for information, which could vary from biscuits to potato flour in Russia. I had previously worked primarily for organisations that had no in-house information department. In cooperation with ZyLAB, I set up a news notification tool. ZyLAB did text retrieval, and I did a lot with clippings and summaries. We went on to sell a package together, called NewScan. We scanned articles using a scanner. The text was searchable, and we built up queries on the basis of the text. It was a grey area in terms of copyright. I occasionally received letters from publishers. I eventually entered into agreements with Rob Veneboer, now Managing Director at LexisNexis, back when he worked at PCM. Later, a publisher bought those activities. Clients started to ask me whether I knew people who did this kind of work. In the beginning, I passed on a few names, but later one of my acquaintances pointed out that I could ask for payment in return for such a service. So I set up Hatch, my recruitment and selection firm.

• FUTURE

I predict that in the future, there will be a much broader spectrum of people performing this type of role. Specific qualifications will be less important. One point in favour of someone with a specific qualification is that the potential employer knows that he or she possesses passion and intrinsic motivation. A HEAO (higher economic and
administrative education) graduate, for example, will find the work too one-sided and will eventually start to lament the lack of opportunities for further growth and development and lose interest. People making horizontal moves into the field will play an increasing role. There is an increase in the number of students enrolled in part-time education programmes. They already have work somewhere and come into contact with information. They discover that they enjoy working with information and that they are good at it. If they want to continue within the field, they enrol in part-time courses. These people often bring a new dimension to the field, contrasting with the traditional information professional. As a recruiter, I consider that very valuable.

I also see that resources are becoming available that were of no use to us until recently. It is becoming possible to connect them together and thus to create new links and to draw conclusions. That requires a creative spirit.

In the future, I see super specialists who are specialised in resources in their specific fields of expertise.

I also predict that the end user will gain access to the resources that have been validated by the information specialist. The information specialist will become primarily a director and architect. I also predict that the job title will become something like ‘information director’.
Hill & Knowlton Strategies

Jos Leensen,
Insights Consultant

(Netherlands – translated from Dutch)

**PRESENT**

Jos Leensen works as an Insights Consultant within the Strategic Intelligence department at Hill+Knowlton Strategies, one of the first communication consultancy firms in the Netherlands. Together with a colleague, Jos works for around thirty consultants. ‘I come from the world of media research, while my colleague has a financial background,’ he says. ‘The Strategic Intelligence department came into being in January of this year and is the result of the fact that our clients are increasingly demanding intelligence reports. Intelligence is more than just media studies, research or information. It is about multiple sources (figures from Statistics Netherlands [CBS], stakeholder studies, etc.) and the combination of these. Together with analysis, interpretation and recommendations, this forms intelligence. Our final product is the intelligence that is required to be able to make decisions. Intelligence is therefore becoming more and more important.’

It is important that consultants are aware of the latest news early in the morning. ‘My working day starts early,’ says Mr Leensen. ‘We highlight and interpret the relevant news for consultants and give an indication of the action to be taken, such as whom to call. In addition, we keep tabs on the newswires so that we can prevent errors from appearing in newspapers or on websites by contacting journalists on time. We also carry out research and investigations, looking at particular topics or companies in greater depth. We sometimes trace stories back five to seven years, such as in the case of parliamentary inquiries. We are currently working on improved ways to present our results. In contrast with the full report, conclusions in particular need to be clearly expressed and visible, so more charts, images and graphics are used. The reports are often thick volumes, so communication by means of visuals is important. People appreciate infographics. Together with consultants, we formulate the opportunities and threats for the clients we work for using the SWOT model.’

Nowadays, companies are bombarded with a huge amount of data and information,
including through social media. The speed of this has increased enormously, and companies are anxious not to miss anything. ‘In the past, the norm was to respond within one working day. Today a response is expected within an hour – and in the future it will be expected within five minutes. This information overload is one of the reasons for the existence of our department. All that information needs to be interpreted, and that is what we do. Previously, information within and about companies was presented in portals and on dashboards. That gave people a sense of control. I now see that help is needed to interpret the data from dashboards.’

Technology plays an important role in monitoring news. ‘The first ports of call – various databases and the Internet – are accessed via computer,’ Mr Leensen says. ‘I recently took a course on Open Source Intelligence to learn where and how you can get valuable information from public sources. We use a lot of paid databases, such as Factiva, LexisNexis and ClipIt. In general, clients have dashboards for the purposes of monitoring social media. We also use Google a lot. Where politics is concerned, much more is required than just media research. We look for stakeholders, government ministers, committees, civil servants, etc. That requires a lot of telephone calls.’

It is important that a source is reliable. The Insights Consultants at Hill+Knowlton clearly state their sources to the consultants they work for. They also know how they can check public resources (including web resources) for reliability. ‘Sometimes we decide to omit information if we do not consider it to be reliable,’ Mr Leensen says.

‘You have to be a media junkie to do this job. In a role like mine, analytical skills are your most important assets. And you have to enjoy working for many different sectors and companies. You have to be able to cope with the speed at which things happen, and people expect you to deliver results faster and faster. With a dashboard, people expected immediate results, but the interpretation of what you see takes up a lot of time. When you receive requests for information, it is also essential to determine what exactly the research question is. Managing expectations is also an essential element. When do you deliver, what exactly do you deliver and in what form?’

**PAST**

Jos Leensen studied Media and Culture at the University of Amsterdam. He has a background in media research and has worked for Hill+Knowlton Strategies for five years. Prior to that, he worked as a researcher for Hill+Knowlton. ‘The image that used to prevail regarding research was that it was rather dull and pointless. Now, with the development towards dashboards, it is also important for other disciplines, such as marketing.’
• Future

What are Jos’s expectations for the future? My expectations are that other organizations will become more active with regard to intelligence. I also expect a consolidation of information provision. I currently use many sources. Sometimes I wonder how it can be possible that there are so many different sources of information. I hope that all Dutch information can come from one source in the future. I now need more than five databases to get a complete picture. I try to capture all the media: newspapers, general interest magazines, online media, social media, radio, TV, etc. In twenty years’ time, my role will have a fancy name. The Strategic Intelligence department is a large, important one with close ties to management. Information occupies an increasingly important position. The team is large, and everyone has his or her specialization. We now cover many aspects with a few people. I predict the emergence of specializations. This kind of work is growing more “in” and more enjoyable. I also predict more students taking related courses and getting related degrees.”
Appendix 4: About the Research

The *Past, Present and Future of Information Management* report was built on primary data secured during in-depth interviews with senior information executives in France, Germany and the Netherlands – each from different organisations in a range of roles.

An online survey to information professionals across Europe was also carried out based on the key findings of the qualitative interviews.

Finally, we interviewed senior academics to evaluate the findings. These conclusions can be read in Appendix Two.
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