Research Note 01-15

Intranet Metrics – Discovery, Satisfaction and Impact

30 July 2015

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Executive Summary

Intranet Metrics provides an overview of the ways in which the performance of an intranet can be assessed. The 25 page report covers technical performance, discovery performance, user satisfaction and business impact, and describes both qualitative and quantitative methodologies. The report includes references to books, reports and research papers. In addition to techniques that can be used directly by an intranet manager it also summarises the methodologies used by five external intranet benchmarking services. Inevitably there is a fine line between the research required in the process of developing a new intranet (or a substantial re-design of an existing intranet) and the research required to manage an intranet in operation. Many of the techniques described in this report have a value in both situations.

The author

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Note

Some of the research papers cited in this report can only be accessed through the payment of an article license fee. These papers have only been included where they make a significant contribution to the topic of this report.

1. Introduction

A common feature of both intranets and enterprise search applications is that the managers of these applications invariably find themselves under some pressure from their organisations to justify the resources that are being allocated to these applications even though the cost per user is very low indeed compared to (for example) an enterprise resource planning (ERP) application. The reason for this is often that almost all other enterprise applications can be justified (at least in management terms) on the direct benefit brought to the organisation, being regarded as a 'cost of doing business'. This is not the case with intranets and search applications where the information discovered is used with a range of other information and knowledge to support a decision, perhaps some time after the information was downloaded from the intranet.

Intranet performance can be tracked in many different ways, and the challenge is to find the best combination of metrics for reporting up the line of management. The objective of this Research Note is to set out a framework for intranet metrics that can used to assess

- Technical performance
- Discovery performance
- User satisfaction
- Business impact

The choice of metrics will depend on the particular governance context of the organisation and the priorities given to achieving individual business objectives.

2. Summative and formative assessment

Before moving on to wider scale assessment and benchmarking approaches it is important to differentiate between summative and formative assessment. The concepts come from education, where an assessment is defined as any process that provides information about the thinking, achievement or progress of students. Summative assessment is intended to summarise student attainment at a particular time, whereas formative assessment is intended to promote further improvement of student attainment. In other words it is about a differentiation between an assessment *of* learning versus an assessment *for* learning.

In the case of intranet performance assessment a summative perspective would report on the number of unique users, the number of pages being published, and the number of pages downloaded, and compare these against similar data over the previous six months. Increases in all three metrics could be regarded as good progress. However a formative assessment first sets out the overall objective of the intranet in six months' time and then considers whether the trends of the previous six months are such that this objective can be attained. Both categories of assessment have a value, but it is the blend of the two categories that should be a fundamental element of a performance metrics strategy.

3. Evaluating enterprise application performance

With the notable exception of Microsoft Office virtually all enterprise applications are designed around work processes. Most ERP systems, such as SAP and Oracle, are built on a three-tier architecture: the database layer, the application layer, and the client or user interface layer. These tiers are also widely known as Data, Business/Logic, and Presentation layers. Business analysts will spend a significant amount of time prior to procurement and implementation identifying and documenting business processes. These will be coded into software and delivered to users as a set of linked screens of data and information.

Software developers focus their effort into ensuring that the data and business/logic layers of a system are stable, functional and robust, and usually pay little attention on the presentation/user-interface layer. This is particularly true of ERP systems where, as the business' system of record, the absolute reliability of the data and application logic necessarily take precedence over ensuring a simple and efficient user interface.

These systems may well have a usable life of years. So long as the process does not change there is no need to change the system. If on release the application does not quite meet requirements the change management process may take some time to accomplish upgrades, especially if the system requires a change to the underlying database schemas. All the content in the application is usually entered through a transaction, each of which has an authority management layer to ensure that only fully verified information is added to the system by someone with the training and authority to do so. The application is delivered only to standard desktop configurations and there is usually an application-specific help desk manned by a team with an in-depth knowledge of the business process and the software application.

These systems tend to be used by employees with specific roles and responsibilities who will undergo training to make sure that they fully understand the way in which the systems work, and who will use the systems every day, if not every hour, to meet business requirements. A very significant amount of testing will be carried out on any major upgrades or a new implementation, often lasting several months.

The business case for the application will be supported by a senior manager at Operating Board level, or at a minimum a direct report line to a member of the Board. The investment will have been largely justified on the basis of a need to comply with external rules and regulations.

The primary metric of performance is that these designated processes can be carried out as quickly as required to complete a business transaction. Time to completion of a process is a very important success metric. User-created content is usually limited to adding notes in about a transaction. Search is limited to a ‘Find’ command which will search specified fields for a defined parameter, such as Account Number or Address.

However there has also been a significant amount of research into aspects of user satisfaction with these systems, a metric that is often used for both intranets and search applications. This research dates back to seminal work by Dr James Lewis working at IBM. In 1995 he published his work in a paper that set out a Computer Usability Satisfaction Questionnaire. The three factors that were assessed as influencing user satisfaction were system usefulness, information quality and interface quality. A decade later an excellent summary of approaches that had been developed for assessing the usability of enterprise systems was published by Eelke Folmer and Jan Bosch at the University of Groningen.

http://www.grise.upm.es/rearviewmirror/projects/status/results../survey.pdf

Arguably the definitive book on user experience studies is Quantifying the User Experience: Practical Statistics for User Research by James Lewis and Jeff Sauro, who have been active in developing UX experience methodologies for many years.

http://store.elsevier.com/Quantifying-the-User-Experience/Jeff-Sauro/isbn-9780123849694/

The nine chapters and many appendices cover

- Introduction and How to Use This Book
- Quantifying User Research
- How Precise Are Our Estimates? Confidence Intervals
- Did We Meet or Exceed Our Goal?
- Is There a Statistical Difference between Designs?
- What Sample Sizes Do We Need? Part 1: Summative Studies
- What Sample Sizes Do We Need? Part 2: Formative Studies
- Standardized Usability Questionnaires
- Six Enduring Controversies in Measurement and Statistics

It is of note that summative and formative assessments each have a chapter dedicated to the way in which they are conducted.

4. ISO 9241 – an international standard on usability

Not only has the concept of satisfaction started to be more widely recognised as a system performance object but also the concept of usability, largely seen in the past as a web application issue. As a result over the last decade most of the leading software application vendors have taken on board the recommendations of ISO 9241, an international standard on usability.

ISO 9241 provides requirements and recommendations for human-centred design principles and activities throughout the life cycle of computer-based interactive systems. It is intended to be used by those managing design processes, and is concerned with ways in which both hardware and software components of interactive systems can enhance human–system interaction.

The standard is a very comprehensive document and probably the only sections that are of direct relevance to intranets are

— Part 100: Introduction to standards related to software ergonomics

— Part 110: Dialogue principles

— Part 151: Guidance on World Wide Web user interfaces

— Part 171: Guidance on software accessibility

— Part 210: Human-centred design for interactive systems

Although positioned as a 'standard' the document has no mandatory compliance. The objective of the standard is to set out 'best practice' requirements so that if appropriate a software vendor or a company can show that it is adoption this best practice approach.

An excellent example of how software vendors are now recognising the importance of usability in its widest sense is a statement of intent from Oracle which would provide a very good basis for any intranet usability strategy.

http://www.oracle.com/webfolder/ux/applications/uxd/assets/faq/how-to-add-ux-in-implementation-cycle.pdf

5. What is 'usability'?

The term 'usability' tends to be used to cover a range of user interface issues, often in the context of 'usability testing' where the focus is on task completion. In this respect it is important to differentiate between the User Interface (UI) and the User Experience (UX), the latter taking into account a much wider range of performance criteria. The current interest in web and intranet usability can be traced back to Usability Engineering, a book written by Dr Jakob Nielsen in 1993.

http://www.nngroup.com/books/usability-engineering/

The ten slogans set out in Chapter 1 of this book remain valid over two decades later

- Your Best Guess Is Not Good Enough
- The User Is Always Right
- The User Is Not Always Right
- Users Are Not Designers
- Designers Are Not Users

- Vice Presidents Are Not Users
- Less Is More
- Details Matter
- Help Doesn't
- Usability Engineering Is Process

The challenge for any intranet manager is to make sure that there is a common understanding among stakeholders, users and the team about what is included in any usability strategy and policies.

6. The intranet difference

None of features of enterprise applications set out in Section 2 are a feature of an intranet, even if it is an application used by most, if not all, employees every working day. Intranets are characterised by (among a multitude of other examples)

- Information is contributed by employees as an adjunct to their main role and responsibility, with usually no training and without any defined quality requirements.
- There are no authority checks on the information so a user may have to make their own value judgement on the quality and veracity of the information
- The information supports multiple business processes, in some cases complementing or even completing with other enterprise-wide applications.
- The intranet information is usually only one element that the user requires to complete a task so the time taken to find the information is a poor metric for success
- The intranet will be used by people with no specific training in its use, who may be unfamiliar with the business process and who will not easily be able to ask the intranet support team for advice as the support team may be a single person.
- The budget for the intranet will come from within the budget of the department owning the intranet even though it is an enterprise-wide resource. Constraints on department budgets will directly impact the intranet budget. The impact of the intranet on business objectives will not have been presented in the business case.

There may well be an implicit view of how well the intranet is meeting business requirements but very rarely an explicit view. As a result it is very difficult for the intranet team and associated stakeholders to make a business case even for resources to maintain the current intranet to an acceptable level of performance because there is no definition of what constitutes an acceptable level of performance. Although there may be step changes in scope, functionality and content from time to time it is also of the greatest importance to modify perhaps quite small elements of an intranet (e.g. a landing page) to improve the overall performance of the intranet. A balance has to be kept between making changes too frequently (leading to users becoming confused about changes in navigation or content location) and not making them frequently enough, with the result that levels of trust in the intranet will decrease rapidly.

7. The benefits of a metrics programme

There are multiple benefits from implementing a carefully designed metrics programme for an intranet, and these include

1. Fixing usability issues before they go viral
2. Tracking levels of use of sections and features of the intranet
3. Establishing priorities for action along with resources and budget requirements
4. Developing the near and medium-term strategy for the intranet
5. Assessing training and support requirements for users and publishers
6. Identifying good news stories for communications initiatives

One often used maxim about the requirement for measurement is "If you can't measure it, you can't manage it." This is often attributed to Peter Drucker, but according to the Drucker Institute Drucker never actually said this. What Drucker did say in his book "Management: Tasks, Responsibilities, Practices" was

"Work implies not only that somebody is supposed to do the job, but also accountability, a deadline and, finally, the measurement of results —that is, feedback from results on the work and on the planning process itself"

Inevitably there is a fine line between the research required in the process of developing a new intranet (or a substantial re-design of an existing intranet) and the research required to manage an intranet in operation. Many of the techniques described in this report have a dual value in both situations.

The challenge is to develop a balance between absolute metrics (e.g. the number of documents downloaded) and relative metrics (e.g. percentage increase of content items), and also between quantitative metrics (e.g. number of users on a working day) and qualitative metrics (e.g. the level of trust in intranet content).

8. Trust and satisfaction as metrics.

The level of trust in an intranet (or in a search application) is arguably the most important metric, as the information found may have to be included in a decision with significant impacts on the enterprise and perhaps even the personal career of the decision maker. However a survey that asks whether users trust the intranet may raise more questions than it answers. Although 'trust' and 'satisfaction' are not synonyms gaining a sense of the level of satisfaction with an intranet will give a good indication of overall trust in the intranet and its content. It also looks less threatening as a concept.

Understanding the level of satisfaction with an intranet provides the intranet team with a metric that is personal to the user, rather along the lines of the concept of 'relevance' in search. A user can be very satisfied with the intranet through the way in which it meets perhaps just a small number of information needs, none of which may have a direct impact on business performance.

9. Defining and measuring 'satisfaction'.

Although the IBM work referred to above took user satisfaction into account the number of users of most enterprise solutions is quite small. An intranet is hopefully being used directly or indirectly by every employee in an organisation. Indirect use takes place where a manager may use the intranet for information that is then passed on down the line of management. However the information provided by intranet and its search application will usually only be one element of the information required by a user. It may also not be for perhaps several days, if not weeks, that the user is able to judge whether the information they gained from the intranet is relevance and of value.

In the case of both intranets and search applications the concept of 'user satisfaction' is often referred to but rarely defined. With two exceptions (referred to below) there has been no academic research conducted into user adoption and user satisfaction with intranets. Indeed there has been little research at all. Many of the research journals in the area of information systems design and performance are published by Elsevier. A search through Science Direct, the online database of Elsevier journals, listed 329 hits for 2015 but none of these are explicitly about intranets, just mentioning intranets in passing as (for example) how a clinical information system development was supported by an intranet-based survey. Interestingly in the list of intranet-related articles compiled by Andrew Wright very few are about performance measurement.

http://www.intranetarticles.com/SitePages/Home.aspx

Andrew Wright has written a very useful summary of the outcomes of the WIC benchmarking application.

https://www.linkedin.com/pulse/what-successful-intranet-andrew-wright

As far is intranet user satisfaction is concerned there seem to be only two research papers of relevance. The first of these, "Intranet satisfaction questionnaire: Development and validation of a questionnaire to measure user satisfaction with the intranet", was published in Computers in Human Behaviour by Javier A. Bargas-Avila and his colleagues in the Department of Cognitive Psychology and Methodology in the University of Basle.

http://www.sciencedirect.com/science/article/pii/S0747563209000922

The paper describes the development of the Intranet Satisfaction Questionnaire (ISQ), which now forms the basis of the Intranet Satisfaction benchmarking service. This is described in more detail in Section 23.

In 2012 Stuart Barnes (University of East Anglia) and Richard Vidgen (University of Hull) reported on their work on the development of the iQual satisfaction metric. This was a small scale study in a single organisation and does not seem to have developed into a commercial service.

http://www.sciencedirect.com/science/article/pii/S0378720612000158

The bibliography in the paper does not mention the work by Bargas-Avila, which seems a surprising omission.

10. Business objectives and information culture

If an intranet is to be viewed by both users and stakeholders as a business-critical application then by definition it must support business objectives. However these are often not well-defined. In the case of information that the intranet could provide there may not be a direct impact on the achievement of business objectives that is capable of quantitative measurement that there might be with a new finance application which reduces debtor days.

Another way at looking at information use within the organisation is provided through a model developed by Professor Chun Wei Choo at the University of Toronto.

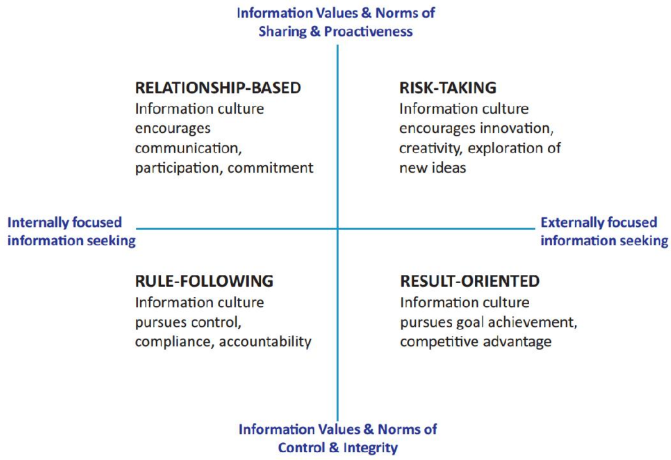


Fig. 2. Information cultures: a proposed typology.

http://www.sciencedirect.com/science/article/pii/S0268401213000819

This model sets out four aspects of information culture and an intranet strategy, and associated metrics, can be mapped to this model. It is important to note that an organisation will exhibit all four of these characteristics to different extents, and as always with an intranet it is about achieving a balance between often competing requirements.

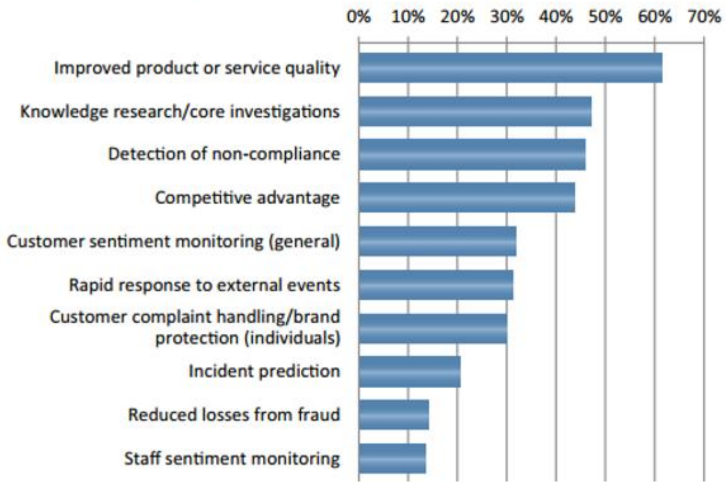
11. Business impact

As has been discussed in Section 2 other enterprise applications have some tangible impact on business operations because of the way in which they support business processes. The nearest of these applications to an intranet might well be a business intelligence application as it does not replicate any business process.

A good illustration of how to frame questions about business value can be found in an AIIM report on content analytics.

http://www.aiim.org/Research-and-Publications/Research/Industry-Watch/Content-Analytics-2015

Figure 22: Which of the following business advantages would be the most useful to you based on intelligence derived from content analytics? (Max 4) *(N=176)*



It is important that a similar set of business advantages can be used within an intranet metrics programme. The extent to which these advantages, or objectives, are being achieved is likely to have a significant impact on the level of investment in an intranet. It is not unusual for these business impact objectives either not to have been clearly defined at in the early stages of intranet development or to have remained unchanged despite changes in business objectives. An intranet may have been redeveloped at a time of a major acquisition so that the cultures of the two firms could be aligned and new common strategies and policies made visible and accessible. With the acquisition complete the intranet needs to be refocused on supporting the growth of the merged business but these objectives may not have been explicitly defined. As well as interviewing users interviews also need to be conducted with stakeholders.

12. Technical performance

Users of web applications expect near-instantaneous display of web pages. There are many elements of delivering these pages that need to be optimised. These include server management, network bandwidth and resilience and local office network capabilities. An additional complication is any delay introduced by security trimming. Once standards have been agreed these should be the subject of Service Level Agreement with the IT team.

When an intranet is based on a conventional WCMS application then the download performance across the intranet is usually very uniform with the obvious exception of where large content items have to be downloaded. This uniformity is more difficult to achieve with SharePoint 2013. This can be especially evident with respect to search performance

https://thwack.solarwinds.com/community/solarwinds-community/geek-speak_tht/blog/2013/05/15/4-causes-of-sharepoint-latency-issues-and-how-to-find-them

http://apmblog.dynatrace.com/2013/03/12/net-and-sharepoint-performance-dont-let-default-settings-ruin-your-end-user-experience/

Performance standards will also need to be established on mobile devices, where network bandwidth is a much more important factor in page load speeds.

13. Discovery performance

There are four ways in which users will be able to discovery information that is held in an intranet

- Using the navigation
- Using landing pages within the navigation
- Using search
- Setting up alerts to new information

The balance of these discovery channels may be different for desktop and smartphone/tablet usage. Web logs and search logs are the primary methods for assessing discovery but seem rarely to be integrated with each other in a way that recognises that users may search and use elements of the information architecture in a complementary way and not as individual discovery approaches.

A large European multinational company made extensive use of teleconferencing. The intranet contained a link to the application that enabled these calls to be set up and access passwords to be generated for internal and external participants. There was a large telephone icon for the link.

The search team, looking at the search logs, were very pleased to see that searches for [teleconference], [conference call] and [conference gateway] were among the most highly used query terms, and accounted for almost 10% of monthly searches. They felt that this was a vindication of the value of search. The intranet team, looking at the page clicks, did so in a way that only highlighted the most clicked- through pages. No one had noticed that inadvertently the link to the teleconference application had been removed from the intranet home page.

So users had started to use search to find the application, but in doing the link to the application appeared on the third page of search results, so the time that was being wasted in using search was quite significant.

The term 'web log' is being used as a generic term for the statistics generated by users working through the navigation, opening documents for review than then downloading documents of particular value. In the case of search logs the definitive resource on search log analysis is Search Analytics for Your Site by Louis Rosenfeld.

http://rosenfeldmedia.com/books/search-analytics-for-your-site/

However there are a number of principles that need to be taken into account.

- **Take an integrated perspective**
  Search logs are of considerable importance in ensuring not only that intranet users are able to find all the relevant information they are looking for but also as a means of validating the performance of the intranet navigation. A review of the logs will identify where searches seem to have been conducted because of a failure of the navigation. This requires close integration of the outcomes of the web and search logs and argues for the responsibility for specifying and analysing search logs for Intranet to be undertaken within the Intranet team itself.

- **Relate analytics to personas and user stories**
  All analytics reporting has to reflect the user perspective, taking account of the different ways in which staff in the persona categories will tend to discover information and also the user journeys that are being undertaken. Intranet team members responsible for the analytics reporting have to be conversant with the way in which the firm operates and the business language that is being used. It is important to be able to spot ‘outliers’ that might be an alert to a change in use or requirements.

- **Monitor content contribution**
  It is easy to focus just on the levels of use and satisfaction with intranet without taking into account the extent to which the needs of content contributors need to be identified and monitored. The issues here will be around whether they have sufficient training, time and support to undertake their publishing commitments, especially in adding additional metadata.

- **Mobile will be different**
  The evidence suggests that mobile intranet users have higher expectations for the way in which an intranet has been adapted for use on their mobile device. Smartphones and tablets both have their limitations and these need to be reflected in the design and tracked closely. It is worth bearing in mind that these devices may be used standing in the transfer bus from an aircraft to the passport desk in an airport, where time is of the essence to check on a detail about the local office or the current status of a meeting agenda.

- **Establish benchmarks**
  It is going to take some time to establish what the benchmarks of user adoption and site use. A careful balance will need to be maintained between fixing what seem to be user concerns on a responsive basis and spending time on an issue that may well either be ‘fixed’ as more content is added or is a result of a lack of familiarity with Intranet.

- **Deliver at department level**
  Most intranets are based around a distributed content contribution model. Good, interpreted feedback to departmental owners and publishers is important in encouraging them to maintain content quality and to adapt their sites to meet emerging user requirements.

14. Engagement surveys
Many organisations use an annual employee engagement survey to assess the value of internal communications channels and to identify areas where employee engagement is not as good as anticipated. An engagement survey is an excellent way of gauging the relative value of an intranet against other communications channels, in particular with respect to email.

A list of ten core questions has been developed by Melcrum
https://www.melcrum.com/research/employee-engagement-measurement-evaluation/top-10-questions-employee-engagement-surveys

It is interesting to note that one of these questions is about the extent to which employees trust the information they receive.

A more comprehensive set of questions is available from Custom Insight
http://www.custominsight.com/employee-engagement-survey/sample-survey-items.asp

The annual engagement survey may have an impact on the timing for any intranet-specific surveys as organisations may understandably be reluctant to have two wide-scale surveys running close together, especially when the questions may overlap. The disadvantage of an engagement survey from the viewpoint of intranet management is that it is only run annually and the complexity of the cross-tabulations can result in a delay before the results become available.

15. User surveys
However understanding attitudes to the ease of use and value of an intranet is important, and so a series of smaller scale surveys can be very helpful. The problem with surveys is that it is very easy for survey fatigue to set in, especially if survey participants feel that there is no visible progress being made as a result of their feedback. These could be carried out on a monthly basis but restricted to particular groups of users in a way that over a six month period a significant percentage of all users had received a survey form. The cycle could then be repeated in a second six-month cycle for 2016.

Another option would be set up something along the lines of who are set the survey on a quarterly basis to get a consistent view of increases and decreases in satisfaction and impact.
It is also possible to install survey software that is only triggered by a specific URL. So for example when someone clicks on the Policy Section no more than two or three very specific questions can be asked.

This can be regarded as intrusive, and so there are some basic guidelines that need to be followed

- Alert users to the fact that the survey is being undertaken
- Enable people to click off the box, or offer the chance to complete the survey later
- Only run the survey for a short period of time
- Feedback the results as quickly as possible

Thomas Tullis and Jaqueline Stetson have published a review of web site usability questionnaires.

http://home.comcast.net/~tomtullis/publications/UPA2004TullisStetson.pdf

Many of the questionnaires are listed out in the paper and would be a good basis for intranet user surveys. Appendix A sets out a small-scale intranet user survey as the basis for customization for use in a specific organisation. Rosenfeld Media will be publishing Surveys that Work by Caroline Jarrett later in 2015

http://rosenfeldmedia.com/books/surveys-work/

In designing user surveys it is important to take account of the personas that have been developed for the intranet.

16. Net Promoter Score

A certain mystic has grown up around the use of a Net Promoter Score as a means of having a single metric to assess the overall performance of an intranet. The Net Promoter Score is a customer loyalty metric developed in 2003 by management consultant Fred Reichheld of Bain & Company in collaboration with the company Satmetrix. It is worth noting that the term "Net Promoter Score" is a registered trademark of Satmetrix and its use as such should be acknowledged in any reporting. The objective was to determine a clear and easily interpretable customer satisfaction score which can be compared over time or between different industries. The NPS assesses to what extent a respondent would recommend a certain company, product or service to his friends, relatives or colleagues through a question such as

"How likely are you to recommend company/brand/product X to a friend/colleague/relative?"

This can be answered on an 11-point rating scale, ranging from 0 (not at all likely) to 10 (extremely likely). Depending on the score that is given to the Net Promoter question, three categories of people can be distinguished:

Promoters = respondents giving a 9 or 10 score
Passives = respondents giving a 7 or 8 score
Detractors = respondents giving a 0 to 6 score

The Net Promoter Score is calculated as the difference between the percentage of Promoters and Detractors. The NPS is *not* expressed as a percentage but as an absolute number lying between -100 and +100. For instance, if you have 25% Promoters, 55% Passives and 20% Detractors, the NPS will be +5.

In intranet terms the question might be along the lines of

"How likely are you to trust the intranet as being the definitive source of corporate information?"

However this is not the same concept as being a 'promoter' of the intranet to others. Especially in companies with a strong retain brand image the NPS is seen as a very important metric. Using it as an intranet metric is not advisable without a clear commentary about the basis on which the question has been framed and scored. The value of NPS comes in understanding the reasons for respondents being Promoters, Passives and Detractors.

17. User interviews

Interviewing individual users may take time but can yield substantial benefits in understanding the business context in which an intranet is being used. Ideally these interviews need to be semi-structured so that a core set of topics is covered in all the interviews with scope for adding in specific questions related to business tasks and departmental objectives. Before undertaking any programme of interviews it is well worth reading Interviewing Users – Uncovering Compelling Insights by Steve Portigal.

http://rosenfeldmedia.com/books/interviewing-users/

18. Organisational periodicity

Many organisations run through an annual cycle of activities and information requirements. One of the best examples of this are universities and other academic institutions where the year starts with admissions in September/October and ends with Examinations in June/July, against which there is a substantial amount of continuing administration and research. Any survey and its review needs to take into account changes in user requirements for information in the course of the year.

19. Assessing people search

The indications are that little attention is paid to the performance of the people search functionality of an intranet. Although this is often search-based it can also be delivered by an A-Z list of people or through links on pages to content authors. There is an outstanding example of the wealth of detail that can be obtained from people search logs in a paper by a team from IBM led by Ido Guy

http://www.research.ibm.com/haifa/dept/imt/papers/guyCHI12.pdf

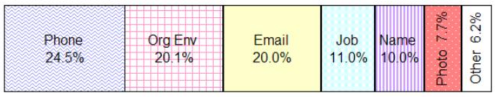


Figure 8. Most important information based on survey results.

Some of the participants mentioned that the selection depends on the search scenario. "*If I know the name, I will be looking for email or phone, but if I know the [job] title, I want the name*" wrote one participant and another commented: "*When I look for someone I know, I'm usually after their contact info, and when I look for strangers, I'm after all the other info: organizational structure, location, division, photo, etc.*"

This figure is taken from the paper and highlights two different use models, one where the name of the person is known, and one where the person is unknown.

20. Ethnographic research

Elements of the user-focused assessment techniques come very close to the approaches used in ethnographic research, which traditionally has focused on the behaviour of people within a cultural or organisational setting as a social sciences research methodology. Xerox PARC has published a short overview of the techniques of industrial ethnography

http://blogs.parc.com/blog/2014/05/ethnography-in-industry-methods-overview/

EPIC is a membership organisation focussing on the role of ethnography in industry/

https://www.epicpeople.org/about-epic/

There is now a cloud-based application to support ethnographic research projects that could be of value for intranet user research.

http://ethnohub.com/

Jonathan Grudin, a Principal Researcher at Microsoft, has been at the forefront of the use of ethnography for web application development and assessment for many years, and his blog and research papers give a good perspective on the role of ethnographic research.

http://research.microsoft.com/en-us/um/people/jgrudin/

21. Feedback forms

Intranet should have a feedback form, with a link on the main tool bar so that is visible on every page. The key success factor in gaining feedback from users is the contract that is made between the user and the Intranet team. It should be clearly stated that there will be an acknowledgement to the feedback within one working day (or whatever is reasonable) and in that feedback there should be an indication of what action is going to be taken. This immediate feedback, and conveys to the user that their comment is valued. It can be helpful to publish the outcomes of any feedback in due course as it is a clear demonstration that the intranet team are not only listening but acting on the feedback received.

22. Attendance at meetings

A member of the intranet team should sit in on departmental or project meetings having agreed in advance with the chair that the intranet can be placed on the meeting agenda. The value of sitting in and listening to real-world problems can be of great value and also enables the intranet team to be aware of changes in requirements as the group works to improve its performance and the overall performance of the firm. It also surfaces information requirements for projects involving teams of people, rather than individuals.

23. Help Desk requests

My experience is that using an IT help desk to manage an intranet is rarely successful as the Desk needs to be able to ask the right questions to determine the cause of the problem, and then know how to solve them

Frequently asked questions filed with the Help Desk tend to be along the lines of

- I'm having a problem publishing/adding metadata to the content. What am I doing wrong?
- I don't have time to publish this content. Can I send it to you?
- I know that there is a document on X but when I search for it I can't find it. Why?
- I've just downloaded document Y. It should not be on Intranet. Please take it off immediately
- I've found document Z but I know there is a more recent version. Can you tell me where it is?

24. Usability tests

The results from usability tests should always be included in the overall review of Intranet performance. The definitive source of guidance on usability testing is the first of a set of eight reports from the Nielsen Norman Group that summarise the outcomes of usability studies that have been carried out by the Group over the last few years.

http://www.nngroup.com/reports/intranet-usability-guidelines/

The sections in Vol. 01: Intranet Research Overview and How to Run Your Own Studies are

- Step-by-step instructions on how to conduct your own usability research
- Quantitative measures
- Qualitative observations
- Intranet usability trends
- How to conduct your own usability studies
- Recruiting participants
- Questionnaires
- Conducting field studies
- Other usability activities

The 127pp report is priced at $149. The section on other usability activities covers several of the topics included in this Research Note, including the use of web and search logs. The titles of the other reports in the set are

Vol. 02: Accessing the Intranet: Address, Homepage, and Personalization

Vol. 03: HR Benefits, Forms, and Employee Self-Service Features

Vol. 04: Communications: News, Newsletters, and Social Features

Vol. 05: Information about People, Teams, Departments, and the Company

Vol. 06: Searching the Intranet and the Employee Directory

Vol. 07: Navigation and Page Layout

Vol. 08: Content Management and Supporting Multiple Locations and Languages

Vol. 09: Managing the Intranet and Teams

25. Benchmarking

There is a reasonably wide use of benchmarking of intranets, with the methodologies falling into three categories

- On-line surveys completed by intranet users, with the results compared mathematically with those from similar (by size or business sector) organisations
- Benchmarking carried out to a proprietary model by a consulting team who can provide a comparative assessment
- Benchmarking carried out by consultants against a heuristic model of good practice but which is customised for a client and so not comparable against a cohort of organisations.

The challenge faced by all three approaches is to get a balance between the summative aspect (what has been achieved) and the formative aspect (what needs to be achieved to meet objectives. Comparatively speaking a summative assessment is straightforward to undertake, and there will be no recommendations from the exercise. A formative assessment is more complex as the consultant needs to understand what is possible to achieve in order to make recommendations.

There are a number of benchmarking services for intranets and for digital workplaces.

a. Digital Workplace Group
b. Worldwide Intranet Challenge (WIC)
c. Information Satisfaction Questionnaire (ISQ)
d. Digital Workplace Trends
e. Clearbox Consulting

Of these five services Digital Workplace Group and Clearbox Consulting use external assessors; the other three services are self-reporting. When using any external consulting service it is important to work backwards from the report that will be delivered. This report will usually be passed on to line managers and other stakeholders, and leaving a consideration of the report to the end of the project may result in the discovery that the information collected and presented is not totally in line with the expectations of managers outside of the intranet team.

An approach for consideration is to agree in principle what the structure and length of the final report will be, and track this during the execution of the assessment as a benchmark of progress. An example of a set of headings is set out in Appendix 2. It is easy for a report to expand substantially as an assessment project proceeds and it may be that two reports are required, one for stakeholders and a more detailed report for the intranet team.

a. Digital Workplace Group
The Digital Workplace Group carries out intranet and digital workplace benchmarking service for member companies. These projects are conducted by DWG consultants and are not based on self-reporting by users within the organisation.

http://digitalworkplacegroup.com/

The intranet benchmarks cover

Core intranet areas:
Usability
Strategy and governance
Communication & collaboration
Metrics and performance

Specialty evaluations:
Collaboration platform
Mobile app/site
SharePoint implementation
Jive implementation

Advanced assessment:
Overall digital workplace

A digital workplace benchmark service is under development.

b. Worldwide Intranet Challenge (WIC)
The WIC is a web based survey that allows intranet end users to provide feedback about their own intranet. This feedback is then compared with other participating organisations. Participation in the WIC allows organisations to anonymously benchmark their intranet against other organisations and view case studies from organisations who have ranked well in each question.

http://www.worldwideintranetchallenge.com/

The WIC covers the following topics:

- Completing work tasks,
- Quality of content,
- Ease of finding information,
- Employee interaction & engagement,
- Intranet maintenance,
- Look & feel, and
- Performance & availability.

The survey is available in 12 languages - English, Chinese, Danish, Dutch, Estonian, French, French Canadian, German, Italian, Norwegian, Portuguese (Brazil), Russian and Spanish. You can request another language when you register if needed. It is free to participate in an initial survey but there is a charge of $395 AUD for follow-up surveys. A customised analysis of the results is also available.

c. Information Satisfaction Questionnaire
The Information Satisfaction Questionnaire was developed by a team at the Faculty of Psychology at the University of Basel led by DR. Javier Bargas-Avila. The process of developing the questionnaire is reported in *Intranet satisfaction questionnaire: Development and validation of a questionnaire to measure user satisfaction with the intranet, Computers in Human*

Behaviour, 25 (2009), 1241 -1250. The introduction to the research sets out a useful overview of published research into the usability and satisfaction of information systems. The survey has 13 questions which were validated on a rigorous basis and resulted in some changes from the original questionnaire to the final version.

www.intranetsatisfaction.com

Companies will have to implement their own version of the questionnaire, run the survey and analyze it themselves. Getting access to the benchmark is free of charge, but only when a company provides their own data to the benchmark. No charge is made for participation. ISQ exists in 10 languages - Chinese, English, French, German, Italian, Japanese, Portuguese, Russian, Slovenian and Spanish.

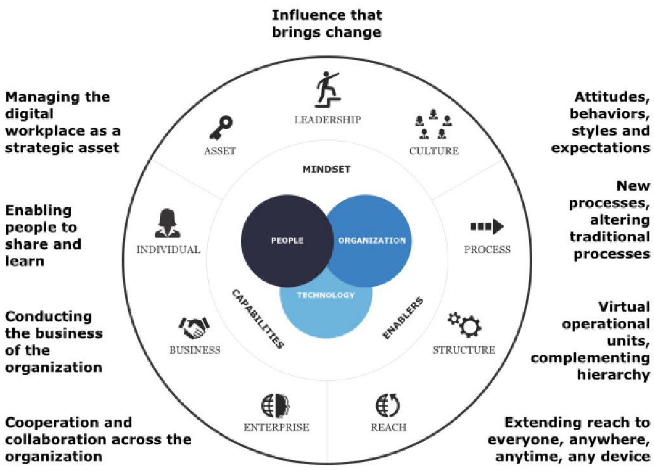
No.	Item
1	The Intranet delivers relevant content for my work
2	The content in the Intranet is up-to-date
3	The Intranet has a concise layout and a comprehensible structure
4	When I read something on the Intranet the content is clear and understandable
5	The Intranet facilitates internal communication (e.g. via an employee-directory, messages from the management or discussion-forums etc.)
6	When I search something with the Intranet search-engine I find the desired information within a reasonable amount of time
7	The Intranet enables me to work more efficiently (e.g. internal workflows, accessing support or information retrieval)
8	With the Intranet I can work fast (e.g. fast page and document download)
9	The Intranet is easy to use (e.g. personalization, handling the employee-directory)
10	I am satisfied with the help and support I get when I encounter a problem or have a question regarding the Intranet (e.g. online-help or help-desk)
11	The Intranet constantly provides up-to-date company news
12	I encounter the work-relevant information on the Intranet in a format I can easily handle
13	Overall I am satisfied with the Intranet

d. The Organization in the Digital Age

Now in the 9th edition, the survey and annual reports started in 2006 as "Global Intranet Trends", then evolved to "Digital Workplace Trends" from 2012 to 2014, to become "The Organization in the Digital Age" in 2015. The name change reflects evolving scope of the survey, which now includes much more than intranets and technologies. Published annually by Jane McConnell (NetStrategyJMC), the analysis is based on a carefully constructed questionnaire of over 100 questions completed by people within organizations who have responsibility for some aspect of their digital workplace.

http://www.digital-workplace-trends.com/

Typically there are around 300 organisations participating each year. Analysis is based on a framework of 9 dimensions as shown in the diagram on p20.

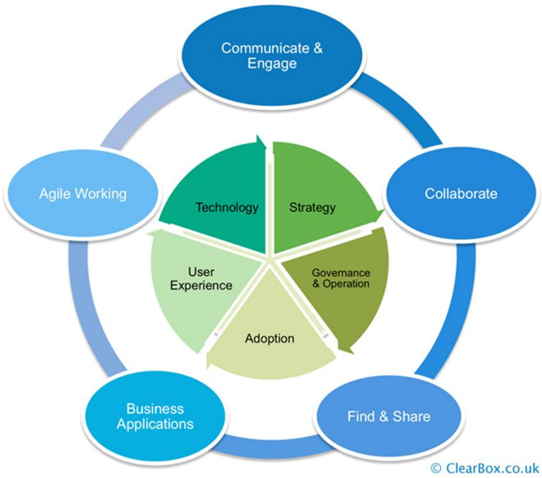


It covers digital capabilities of people, business and the enterprise. It deals with enablers, which cover processes, virtual structures and reach (accessibility of the digital workplace to all the workforce). It includes mindset, which is broken into three categories: leadership, culture and asset (governing the digital workplace as a strategic asset).

Organizations respond to the online survey questions and receive their scorecard, which is based on three levels of maturity — starting, developing and maturing — across the 9 dimensions. The scorecard and accompanying reference guide can be used to educate and build understanding of what digital means for organizations. Some organizations run workshops based on the survey, discussing and responding to the questions as individuals and as a group. The resulting scorecard can be used to identify different perceptions within the group as well as call attention to areas for improvement.

Each year, scorecards are published per industry or sector of activity so that organizations can see how they compare to their peers. Digital leaders (referred to as Early Adopters) are compared to the Majority of organizations, and individual teams can see where they stand overall.

e. Clearbox Intranet Assessment Framework
ClearBox Consulting has a proprietary method for developing intranet and digital workplace strategies based on an assessment framework and a series of activities for data gathering and consensus building.



The approach is based on a framework of ten dimensions. Five of these are to do with capabilities or services that a digital workplace should provide (the outer blue ring in the diagram). The other five cover management activities needed for effective operation (the inner pie of the figure).

Digital Workplace services
1. Communication and employee engagement (e.g. published intranet; forums)
2. Collaboration (e.g. team spaces; social networks)
3. Finding and sharing of information and knowledge
4. Business applications (process specific tools and employee self-service)
5. Agile working – the ability to be productive any time and place

Digital Workplace Management
1. Strategic planning
2. Governance and operational management (including team structure)
3. Proactive support for adoption
4. High quality user experience

5. Robust, secure and flexible technology

Each dimension has 10-20 sub-areas that are investigated using a combination of stakeholder interviews, hands-on assessment of the intranet and user feedback.

The framework can be used both quantitatively, scoring against each aspect to give a baseline for improvements, or in a more qualitative fashion to identify priority areas for development and future strategic options. The framework is then used to map proposed changes into benefits to the organisation and its strategic priorities.

26. Mobile intranet metrics
Although there is a strong consensus that the level of use of intranets through tablets and smartphones will increase little attention seems to have been paid to the implications for intranet metrics. Indeed a review of UX Matters, one of the leading UX e-magazine, would suggest that there is very little consideration of enterprise intranet access issues in comparison to the use of web sites through mobile devices.

The problems will be especially challenging with the use of apps and the use of search where the matter of use may be so different that just aggregating mobile and desktop use will not identify opportunities and issues that need specific attention. A good place to start is a contribution to UX Matters by Steve Hoober, which emphasis the task flows that may need to be supported and monitored and the use of the 'back' concept which might change the page clicks on some pages because they are being used as a navigation, rather than an information, asset.

http://www.uxmatters.com/mt/archives/2015/03/tools-for-mobile-ux-design-task-flows.php

http://www.uxmatters.com/mt/archives/2015/07/back-the-stack-and-authentic-design.php

Whatever metrics are developed for a desktop version of an intranet will need to be reconsidered from the beginning for mobile use.

27. Communities of Practice
Participating in communities of intranet practice can also provide an informal assessment of intranet performance and also good practice ideas for carrying out the assessment approaches outlined in this Research Note. Three that we are aware of are

https://groups.yahoo.com/neo/groups/intranetters/info

http://jboye.com/groups/

http://www.intrateam.dk/gb/node/4429

28. Search for [intranet]
It can be quite revealing to undertake a search for [intranet] to see where it may have been mentioned in news items and especially in social media applications.

29. Information quality
A major issue in intranet management is about how best to maintain the information quality of the intranet. One of the early, and well-founded, research projects into information quality was carried out in 1996 by Richard Wang and Diane Strong.

http://courses.washington.edu/geog482/resource/14_Beyond_Accuracy.pdf

In their view information had four levels of quality

- Intrinsic quality: the accuracy and credibility of the information

- Contextual quality; a measure of the extent to which the information was structured in a way that facilitated its use in a work process
- Representational quality; the ease with which the information could be understood, perhaps through an absence of jargon
- Accessibility quality; the ease with which the information could be found

In the paper the authors noted that a salient feature of their research study was that quality attributes of data are collected from data consumers instead of being defined theoretically or based on researchers' experience.

However in the case of intranets the quality and consistency of metadata tagging is especially important. To some extent that might be an element of the metric of accessibility quality but is not explicitly included.

30. Content publishing
Tracking publication performance is often overlooked in intranet assessments. The time taken for a content publisher to upload a document will of course vary with the complexity of the document and the amount of metadata that needs to be added to the publishing template by the publisher. Also of importance is the measurement of delays in publishing from the date that a content owner has approved content for publication, and the backlog of items that are waiting to be uploaded.

As well as assessing the rate at which content is being added to an intranet it is important to track the review of this content, creating something along the lines of an aged debtor list to identify content owners who have not completed a review of their content to an agreed schedule.

31. Knowledge management metrics
An intranet is very often an important channel within a corporate knowledge management strategy. KM metrics are beyond the scope of this report but the two papers below provide a good introduction to KM metrics and some of the techniques may be of benefit in understanding the use and value of an intranet.

Measure what matters: A practical approach to knowledge management metrics
http://bir.sagepub.com/content/31/3/154

Knowledge Management performance measurement: measures, approaches, trends and future directions
http://idv.sagepub.com/content/31/3/239

32. Key Performance Indicators
The challenge for an intranet manager is which of the potential metrics to include in a regular report to managers and stakeholders. Any attempt to report on a small number of metrics runs the risk of not providing sufficient transparency into the operational effectiveness of the intranet. Jeff Sauro has undertaken several studies into whether a number of different metrics can be mathematically integrated into a single metric. The two papers below are examples of his approach.

https://www.measuringu.com/papers/p482-sauro.pdf

https://www.measuringu.com/papers/HCII2005_sauro_kindlund-V9.pdf

It is in developing KPIs that the differences of approach between summative and formative assessments are especially important to consider.

33. Team resources
The time and skills needed to undertake the level of performance assessment set out in this should not be under-estimated. The 'number crunching' element of the analytics work is only

one element of the total performance assessment. It is important that the analysis is undertaken on a regular basis. All too often this work gets put to one side because there seem to be more important current issues to resolve. Trends in metrics are very valuable and as soon as the periodicity of a metrics measurement is compromised so also will be the value of the metric.

The reality is that the majority of intranets are managed by just one person. Where this is the case then the choice of what to measure is even more important that where there is a larger team so maintain the balance between measurement and action. Even where there is a larger team it is well worth reading The User Experience Team of One - A Research and Design Survival Guide by Leah Buley

http://rosenfeldmedia.com/books/the-user-experience-team-of-one/

34. Pilot testing
All the elements of performance testing need to be pilot tested ahead of use. This is especially the case for the surveys, because of the questions and scoring elements need to be changed then the consistency between surveys will be lost. As with all aspects of performance testing both the absolute values and the changes over time are equally important to track and report.

35. Planning a metrics programme

	Summative	Formative
Quantitative	Technical performance Engagement Web logs Search logs User satisfaction surveys Content publishing levels	Business impact survey
Qualitative	Usability tests Feedback forms Help Desk calls Communities of practice	Stakeholder interviews User interviews Attendance at meetings

This matrix summarises the options that have been outlined in this Research Note. Any metrics programme has to be a balance between the resources available to undertake the metrics work and the benefits of reporting a particular set of metrics. However reporting metrics is not the end of the story. Reporting should always be in the context of what needs to be enhanced, what the options are for effecting the change and how the impact of the work on intranet performance will be measured through changes in one or more of the reported metrics.

36. Further reading
Assessment consulting

http://www.steptwo.com.au/services/consulting

http://kilobox.net/services/free-intranet-benchmarking/

http://www.twohives.co.uk/what-we-do/

https://www.netsight.co.uk/who-we-are/

http://www.smallworlders.com/CommunityPage/939/Intranets/Home

Other resources

http://axerosolutions.com/blogs/timeisenhauer/pulse/325/15-ways-to-measure-the-effectiveness-of-internal-communications-within-your-company-intranet

https://www.etsplc.com/blog/10-go-to-sites-for-employee-engagement-help/

https://www.thoughtfarmer.com/blog/the-best-intranet-metrics-measure-business-outcomes/

http://www.uxmatters.com/mt/archives/2015/06/designing-with-analytics.php

http://www.uxmatters.com/mt/archives/2015/04/can-good-design-be-measured.php

http://www.uxmatters.com/mt/archives/2013/12/redesigning-a-knowledge-management-system-for-usability.php

All of the books published by Rosenfeld Media have enhancing the user experience as their primary theme.

http://www.rosenfeldmedia.com

Appendix 1 – A user survey framework
This appendix sets out a short user survey framework that is designed to form the basis of a discussion within the intranet team and not as a definitive survey format.

Q1 Over the last three months how has your use of the intranet changed
Rate each element by 5 Significantly higher to 1 Significantly lower

- Be alerted to Company-wide news
- Be alerted to Department news
- Make use of office services
- Find a person
- Find expertise
- Find a policy
- Support a team I work with
- Support customer-facing work

Note – these topics are only for illustration. Every organisation will have its own list of core tasks for assessment.

Q2 Rate your response to the following statements over the last three months
5 Strongly agree to 1 Strongly disagree

- My level of confidence has increased that the information on intranet is current
- The ease with which I can find the information I need through navigation
- My ability to personalise the information that I am presented with on a regular basis
- My trust in the quality of information I find through search has increased
- Overall I am very satisfied with the way that intranet supports my work

Q3 Looking back over the last three months would you say that for each of these statements you strongly agree (5) or disagree (1)
- The intranet has enabled me to improve my personal performance
- The intranet has enabled me to increase the contribution I make to the teams I work with
- The intranet has enabled me to improve my contribution to the firm
- The intranet has increased my sense of engagement with the firm
- The intranet has helped me identify new opportunities, either for the firm or for myself
- The intranet enables me to respond quickly to people who ask me for assistance

Q4 In the last three months can you summarise a situation in which the information you found on the intranet made a substantial difference to a work situation?
[Answer in no more than 200 words]

Q5 If you could highlight any single aspect of the intranet that could be improved what would it be?
[Answer in no more than 100 words]

Q6 If you provided an example in Q4 or Q5 could we contact you to learn more about why you made this suggestion?

Appendix 2 - Managing an external intranet assessment project

This is an example for illustration of a set of headings for a formative intranet assessment. At the start of the project the page numbers are inevitably nominal but even with only one or two pages per section the report can easily reach 40 pages.

Executive summary	1
Client profile	1
The intranet and digital workplace landscape	1
Intranet vision and mission	1
Audit	
Summary of client user survey outcomes	3
Project background, scope and objectives	1
Methodology	1
Intranet audit outcomes	3
Context	
Content governance and content life-cycle management	1
Collaboration support	1
Enterprise social networks	1
Search	1
Integration with business applications	1
Mobile and remote access requirements	1
Identifying expertise and knowledge	1
Summary of requirements	2
Strategy roadmap	
Information management strategy	1
Intranet development strategy 2015-2020	3
Search strategy 2015-2020	1
Mobile content strategy 2015-2020	1
Development Plan 2015-2020	3
Implementation 2015-2017	1
Metrics	1
Key Performance Indicators	1
Roles and resources	1
Training, support and communications	1
Governance	1
Risks and issues	2
Recommendations	2
Total pages	40