Data Analytics and customer satisfaction: a case study of docRM

Athabasca University

Enterprise Information Management
COMP602

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Dec 10th, 2015

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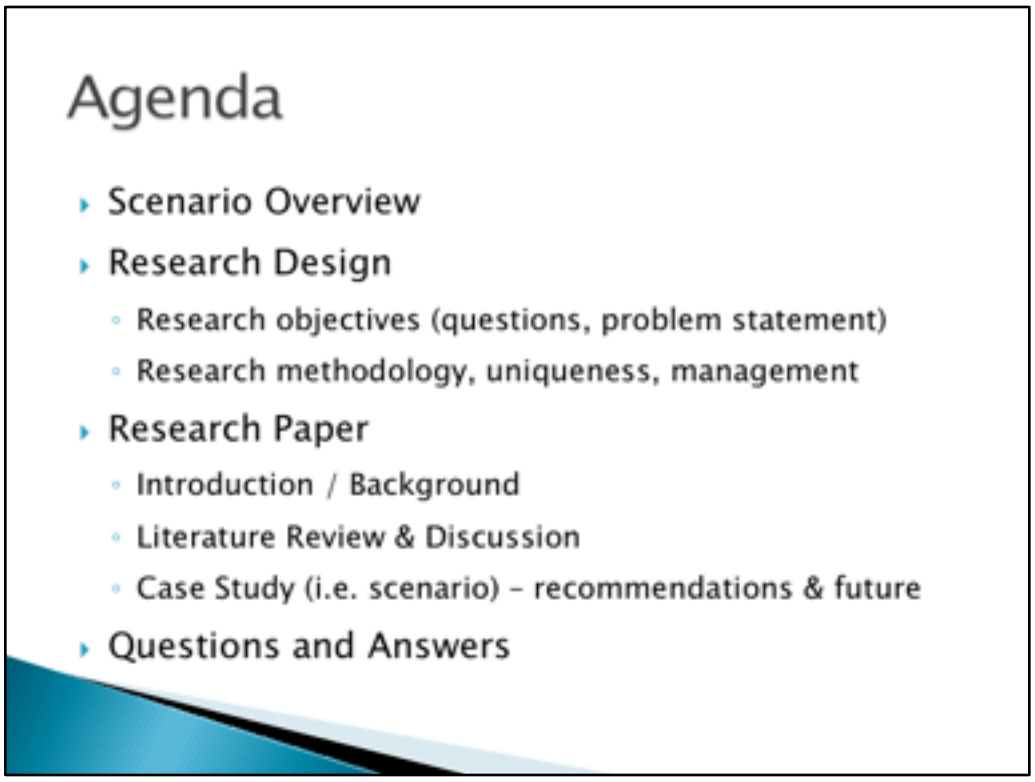


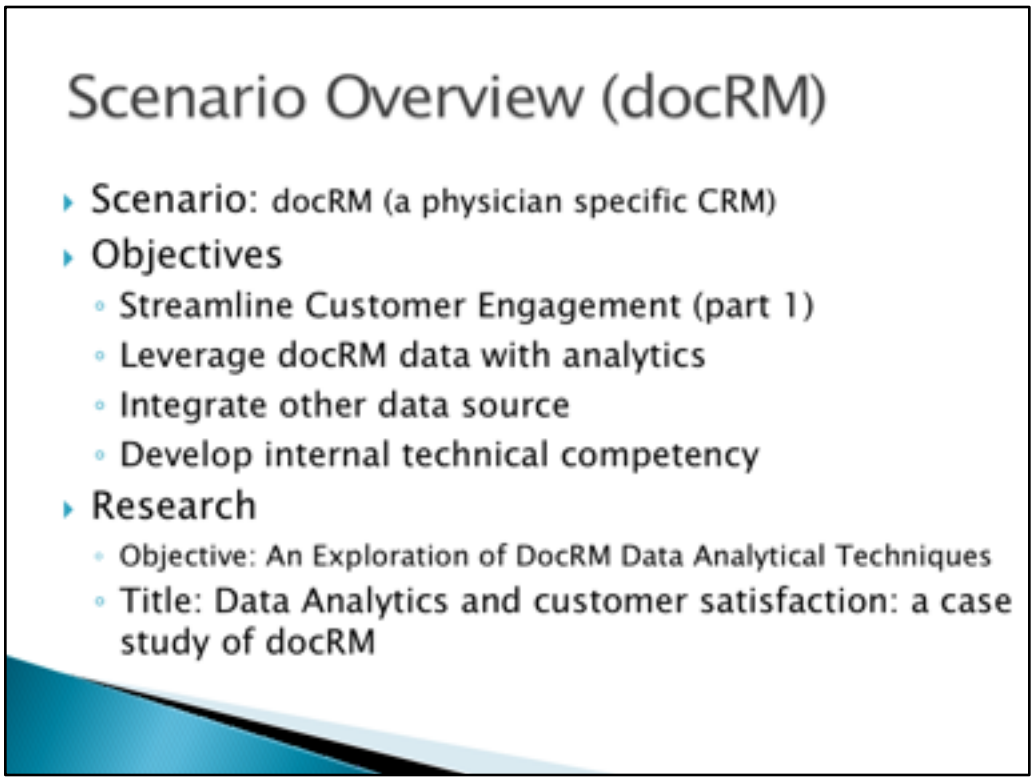
Agenda

I 'll give a high level over of my scenario

Very brief 1 slide overview of the research design

Discuss the Research paper in some detail

Q and A (if time)



Scenario
- Physician specific CRM
- Project related to current workplace

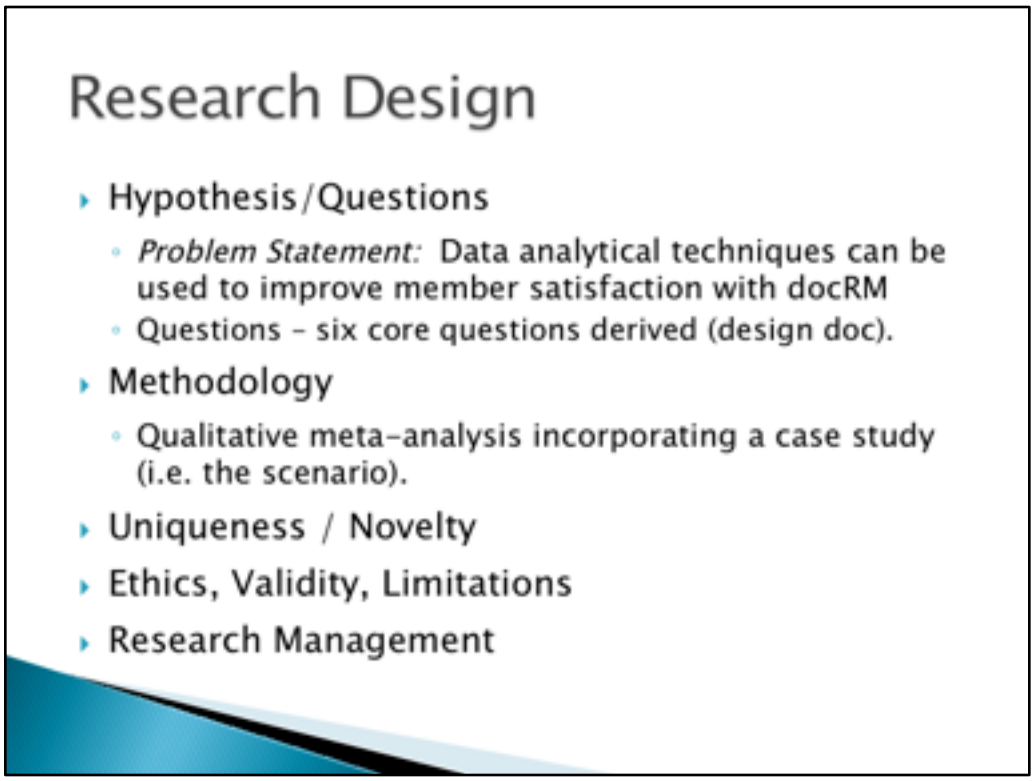
Objectives

(Part 1 – Foundations)
Streamline customer engagement
- implement a CRM platform to support a central point of contact.
- specific to physician needs and meant capture support service interactions between staff and customers (i.e. physicians) and services used

(Part 2 – Research)
Leverage docRM data to develop a better understanding of physician members and ultimately provide decision support.
- identify metrics, key performance indicators (KPI's),
- explore data analytics (e.g. trending, prediction)

Integrate non-docRM data source
- combine docRM metrics with other information system data to provide a holistic member view.

Develop in-house technical competency
- develop an analytics core competency within the docRM organization.



[Commentary] To begin the research paper, I created a research design document. I've been getting more used to designing then writing. This designed helped logically guide the research paper.

Problem Statement – "Data analytical techniques can be used to improve member satisfaction with docRM"
It is felt that this statement will address all the previously stated objectives. (techniques, organizational fit, competency)

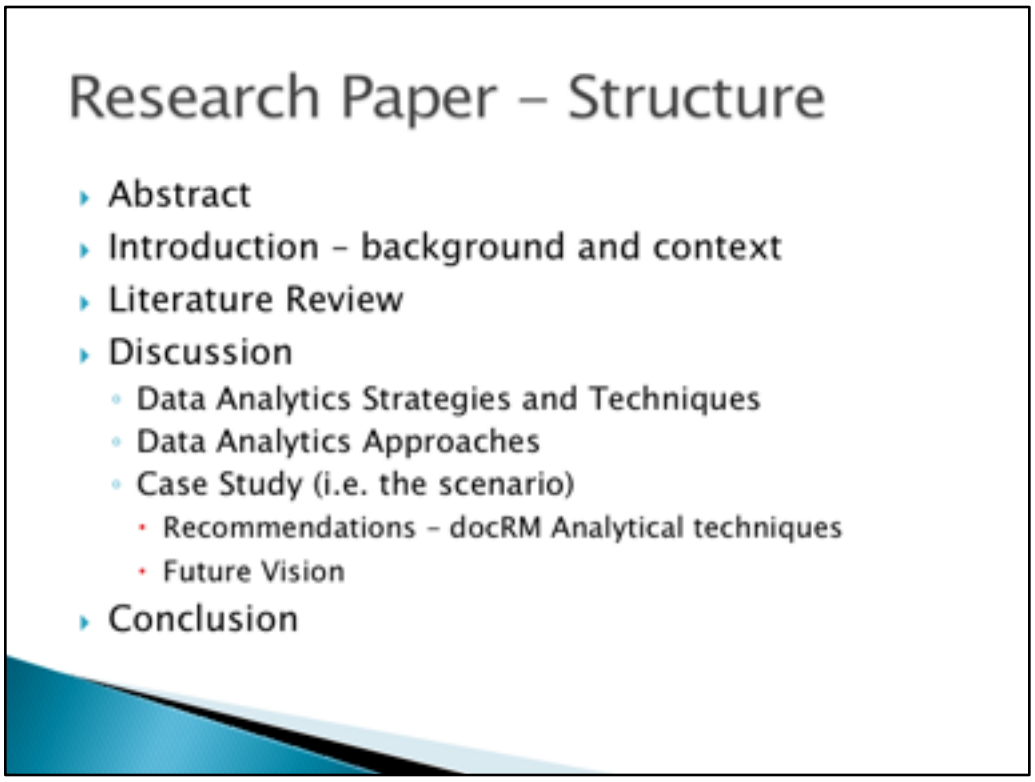
Research Questions
1) What three Data Analytical techniques are most suited to the docRM platform with the goal of increasing member satisfaction?
2) How can Data Analytics programs be scoped to match an organization's readiness?
3) How can Data Analytical programs be implemented with minimal organization risk?
4) What steps need to be taken when embarking on a Data Analytics initiative?
5) Which tools/techniques are best suited to docRM's stated scenario?
6) Can BI visualizations techniques combine multiple sources and add value in reporting BI related metrics?

Research Methodology
- Study is a qualitative meta-analysis incorporating a case study (i.e. the scenario).
- Methodology is meant to be a good match to the problem statement
- Paper also incorporated the use of Action Learning sets. This allowed objective feedback from research peers to be incorporated, in my case to help shape problem statement and questions.

Uniqueness and Novel of Research (the 'why' behind the research)
- While there is a lot of research on various analytical techniques, there is little research on application of techniques in a specific scenario.
- Not a lot of research on implementing a BI initiative … as a result many failed projects (59%)
- Thus the research paper includes organizational strategies, readiness, and approaches to analytical initiatives.

Validity and Limitations
- Research validity could be an issue
- Additional limitations are related to chg mgt, performance and privacy concerns.

Research Management
- Discuss Mendeley for citation and literature management.
- Research Literature sources - Online libraries, Public/Government websites. ACM, IEEE, Google Scholar, and government and private sector websites (appropriate amount of scholarly skepticism)



Strait forward structure, typical to most research papers. Followed APA standards.

Introduction

- To fully leverage business data, analytics must be used.
- CRM (the case study scenario) suited to analytics – in fact most research indicated that CRM not fully implemented without analytics.

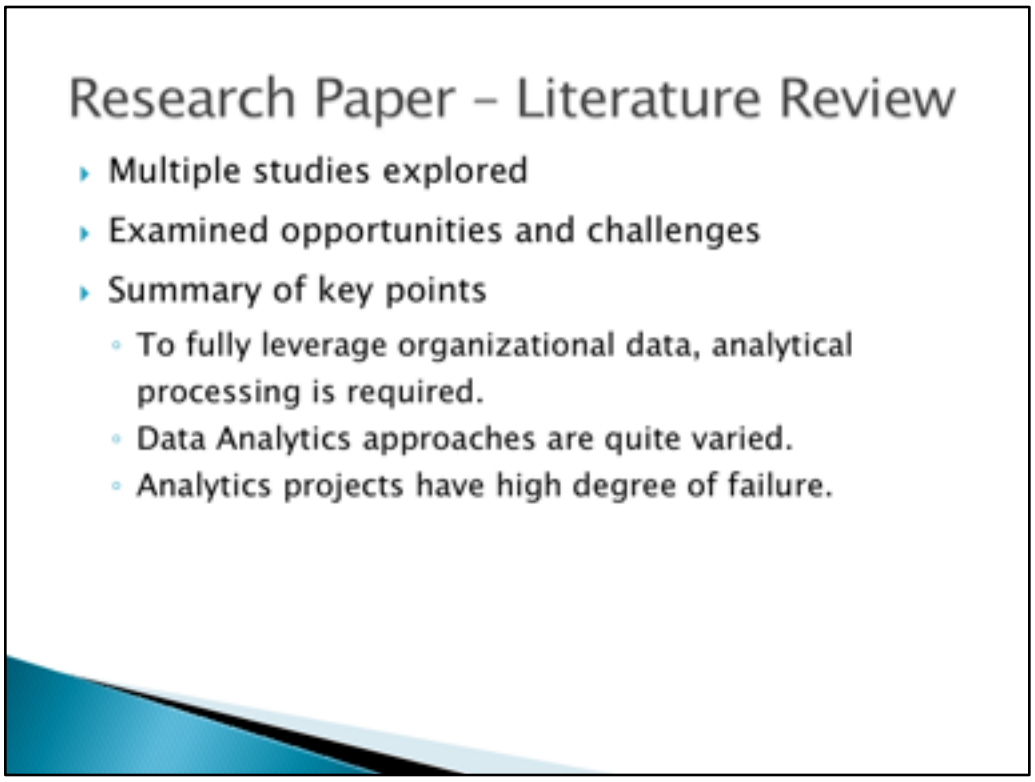
Literature Review – examination of current and past literature related to this study

Discussion

- Data Analytics Strategies and Techniques – overview of Data Analytics implementation strategies and techniques.
- Data Analytics Approaches – explore organizational approaches to implementing analytics initiatives.

Case Study

- Recommendations for implementation of analytical techniques in docRM.
- Future View



Multiple studies explored (6 cited and 15 papers reviewed) – studies chosen were related to scenario an objectives.

Success

Lit review outlines two success stories. CVS Health (predictive analytics) , KRAFT (organizational dashboard - visualizations)

Challenges

Hamel (n.d.) states that "59% of BI projects aren't successful. And fewer than 30% of business intelligence projects meet the objectives of the business"

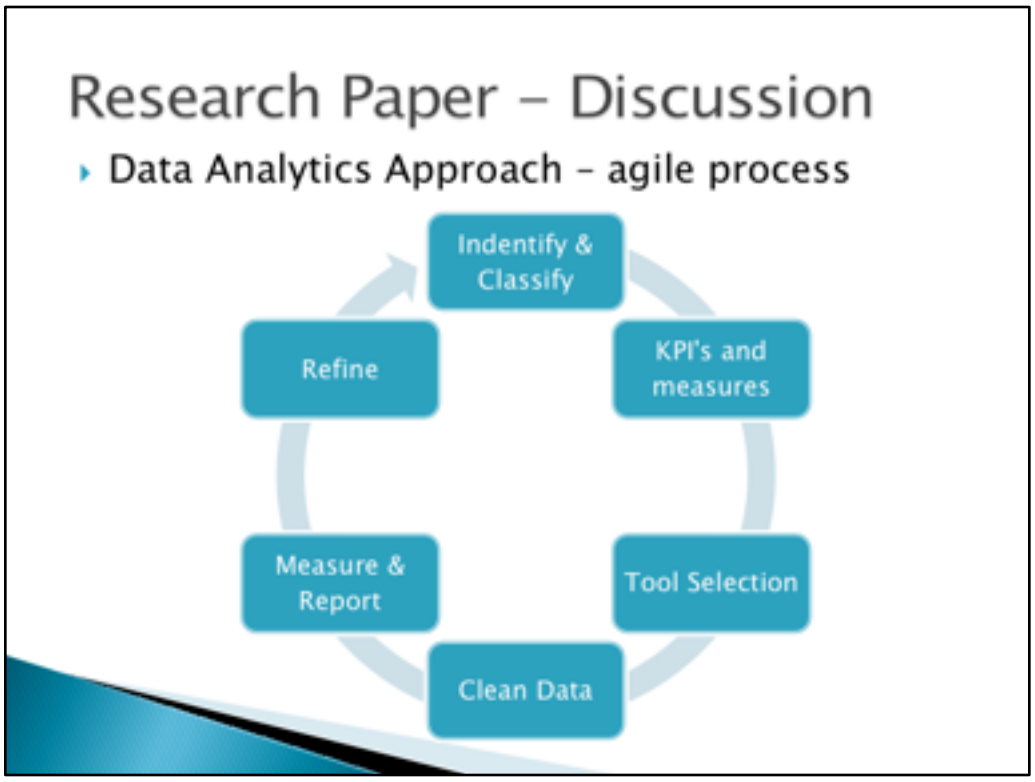
Key Points

- In order to fully leverage organizational data, analytical processing is required. & CRM suited to analytics
- Approaches to Data Analytics initiatives are quite varied → Efforts should be made to identify tools and techniques that suit organizational needs.
- Analytics projects have a high degree of failure → Mitigation steps should be considered including ensuring objectives are aligned with organizational maturity.

Literature review and objectives guided the discussion

Readiness (Maturity)

- Success begins with evaluating the organization's resources, culture, and leadership
- Increasing an organizations maturity should be managed to ensure initiatives are not overly ambitious.
- MORG resides in the Level 2 – Limited maturity.



The strategy implies that BI success needs a need for a formal process.

Research indicates
- successful BI projects utilize agile methods as well as deeply involved business users.
- Quick wins and rapid delivery assists with end-user adoption.
- An agile Data Analysis process (see Table 4) is proposed and expected a similar process work be applied to the docRM analytics initiative.
- The process is simple in nature, and can be used at all levels of analytical maturity.
- Certain steps require significant change management, the details of which are out of the scope of this paper.

For each maturity level this process should be followed (at least once). This process is fully developed in the research paper – details provided for each step.

For example data classification based on structure and source

DETAIL

Structured
Internal Sources Transactional systems, CRM, Finance, HRIS, etc., Document management/SharePoint meta-data, etc.
External sources Government census data, government demographics data.

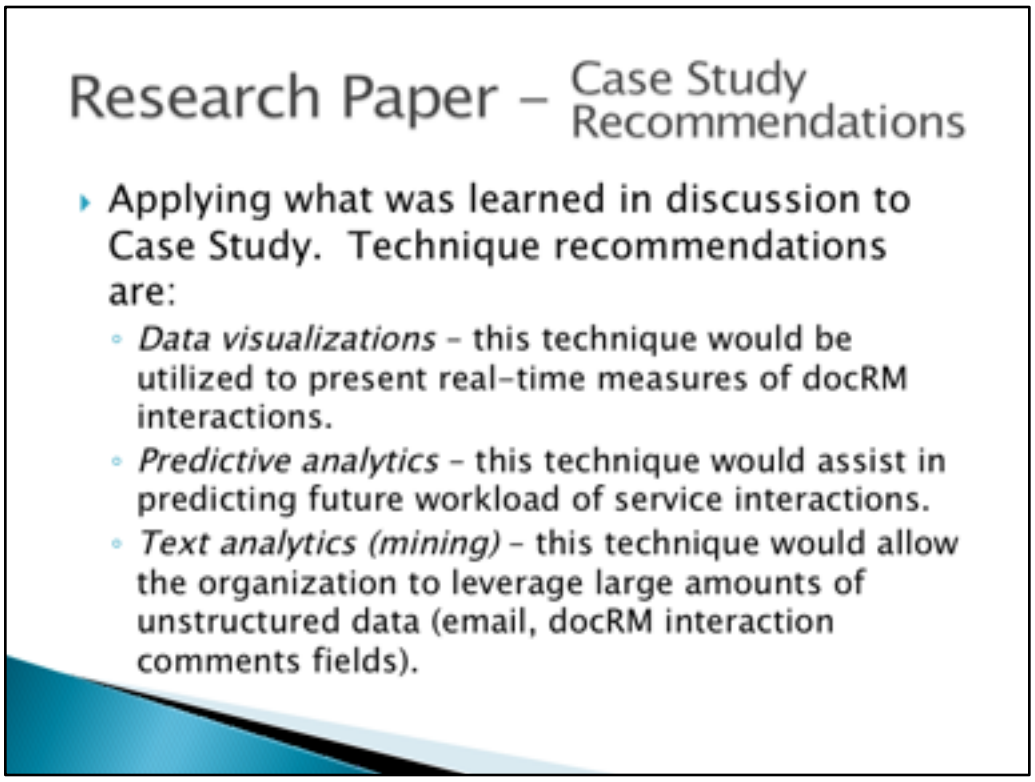
Unstructured
Internal Sources Email, File text data, Event logging, Free form database 'comment' fields.
External sources Website Links, Twitter responses, web pictures

Data type is particularly import as in most organizations, 80 percent business information resides in unstructured data (Grimes, 2008). The docRM analytics initiative contains both structured and unstructured data.

Don't have time to go into each of these in detail, however the techniques were weighed against the goals and organizational readiness to make future conclusions.

Classifying was not easy exercise (and could be a paper on its own) as techniques are not always mutually exclusive. Techniques sometime build upon each other.
For example Text analytics can be used to uncover patterns and trends. That data can augmented to correlation data and NLP for predictions and sentiments scores.

Techniques
Text analytics (content analysis) – discovers patterns in text. Usually involves building a catalog of patterns, although the patterns themselves can be generated by algorithms.
Predictive analysis – analyzes the data to predict future trends. This method allows you to give a predictive metric to variables.
Visualization – represent data in a form that humans can derive quick meaning. This includes techniques to search out answers (reporting, drill downs and dashboard widgets). Note that this technique is usually 'on top' of other techniques.
Correlation – a statistical measure that indicates how close two variables are related. Can be used assist in trending and prediction.
Aggregation – is the process of summarizing data for reporting or analytical needs. . This technique allows for rapid (or preloaded) aggregation and joining of data. This technique powers a lot of drilldown reports and grouping.
Regression – used to determine how changes in variables affect one another. Can be used assist in trending and prediction.
Cluster Analysis – statistical algorithm that divides a large group into a number of smaller groups similar type. Allows for grouping of like individuals and reveal patterns that may not have been previously known.
Classification – determines, through examining data, categories and taxonomies.
Natural Language Processing (NLP) – analyzes human speech/text and derive user sentiment.
Optimization – can be used to examine and improve complex processes, suited to scheduling, project management and routing.

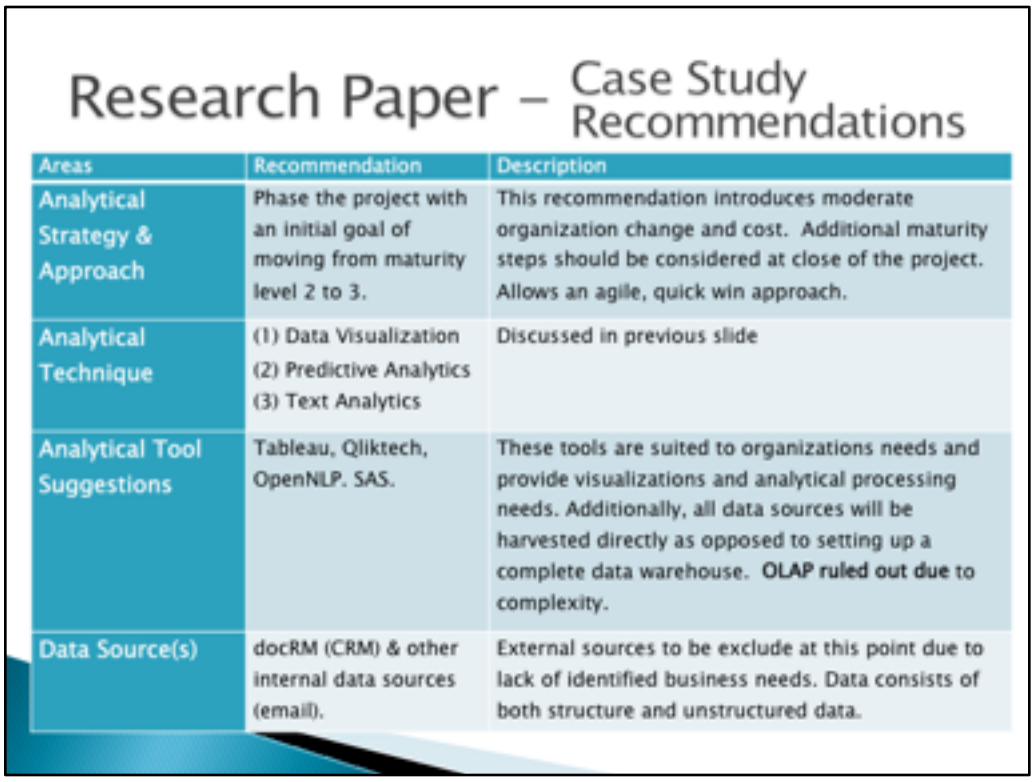


Make note of OLAP and not in scope --- OLAP itself provides for easier analytical reporting techniques. Out of scope of this paper due to complexity for org.

Data visualizations – this technique would be utilized to present real-time measures of docRM interactions. The measures could include (active calls, number of calls per hour/day/week, mean time to closure, etc.). This reporting would be highly visualized to in a dashboard and drill down approach and would allow for ad-hoc decision making

Predictive analytics – this technique would assist in predicting future workload of service interactions. That measure would allow the organization to set and reporting compliance on target goals (KPI's) for support satisfaction. Decisions to add or train support staff could me made based on the analysis.

Text analytics (mining) – this technique would allow the organization to leverage large amounts of unstructured data (email, docRM interaction comments fields). This technique also makes use of Natural Language Processing (NLP). Text analytics has potentially the most value of the three initiatives and may allow the organization to score sentiment as a part of the satisfaction score.



There is a lot of detail here however key points are

1. No dedicated OLAP out of the gate
2. Tableau or Qliktech tools (RAD tools for BI) – can do visualizations and cleaning, reformatting of data.
3. Other internal data sources.

Visualizations are a strong communicator and allow human analytics on top of data analytics…. This is historical information.

Tableau is a RAD tools for BI reporting (quickly create visualization w/o need to large OLAP warehouse)

Table can also do Pearson correlation for trending information (using back end R or SAS software).

Make note of OLAP and not in scope --- OLAP itself provides for easier analytical reporting techniques. Out of scope of this paper due to complexity for org.

There are several initiatives that could be included in future Data Analytics initiatives. The following areas should be pursed:

Cloud Analytics – Microsoft, Amazon, IBM, are all heavily investing in their cloud analytics platforms. This could allow for an easy transition into more advance capabilities.

Thank you ....

Questions?

References

Hamel, P. (n.d.). Why Do So Many BI Initiatives Fail? Retrieved November 18, 2015, from http://www.silvon.com/blog/bi-initiatives-fail/

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