Research Presentation Data Analytics

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Enterprise Information Management
COMP602

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Dec 13th, 2015

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Agenda

- Scenario Overview
- Research Design
  - Research objectives (questions, problem statement)
  - Research methodology, uniqueness, management
- Research Paper
  - Introduction / Background
  - Literature Review & Discussion
  - Case Study (i.e. scenario) – recommendations & future
- Questions and Answers

Scenario Overview (docRM)

- Scenario: docRM (a physician specific CRM)
- Objectives
  - Streamline Customer Engagement (part 1)
  - Leverage docRM data with analytics
  - Integrate other data source
  - Develop internal technical competency
- Research Topic
  - ‘An Exploration of DocRM Data Analytical Techniques’

Research Design

- Hypothesis/Questions
  - *Problem Statement:* Data analytical techniques can be used to improve member satisfaction with docRM
  - Questions – six core questions derived (design doc).
- Methodology
  - Qualitative meta-analysis incorporating a case study (i.e. the scenario).
- Uniqueness / Novelty
- Validity, Limitations
- Research Management

Research Paper – Structure

- Abstract
- Introduction – background and context
- Literature Review
- Discussion
  - Data Analytics Strategies and Techniques
  - Data Analytics Approaches
  - Case Study (i.e. the scenario)
    - Recommendations – docRM Analytical techniques
    - Future Vision
- Conclusion

Research Paper – Literature Review

- Multiple studies explored
- Examined opportunities and challenges
- Summary of key points
  - To fully leverage organizational data, analytical processing is required.
  - Data Analytics approaches are quite varied.
  - Analytics projects have high degree of failure.

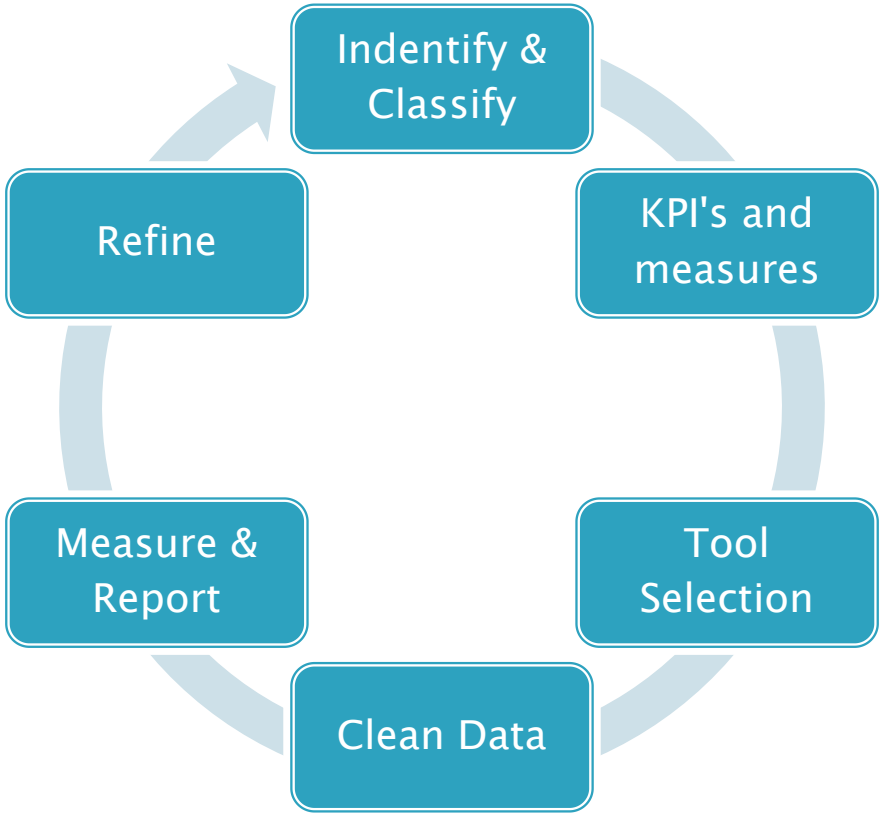
Research Paper – Discussion

- Data Analytics Strategies
  - Organizational Readiness (Levels) – analytics initiative must be 'right sized'

Levels of Analytical Organizations		
Level	Type of Analytics	Description
1 – None	Transactional/ Operational Reporting	Little to not BI or analytical reporting/metrics. Focused on operational reporting.
2 – Limited	Localized Analytics	Narrow view focus with pockets of isolated analysts (CRM, Finance Systems, etc.). Little to no support resources allocated.
3 – Minimal	Aspirational Analytics	Recognition and support from the Executive team of the desire to move to level's 4 or 5. Understanding of some of benefits of analytics. Programs developed for early metrics and basic analytics. Start of BI tool adoption and analytics.
4 – Moderate	Integrated Analytics	Enterprise BI principles in place and supported by C-suite. BI team exists however culture of curiosity (fact-based) does not yet exist. Programs underway to move attempt to move to level 5.
5 – High	Enterprise-wide Analytics	Enterprise wide BI initiative fully implemented. Support from CEO all management levels. Fact-based culture supported by highly skilled BI team. Analytics used for deep strategic & insightful changes.
Source: Adapted from Frederiksen (2009)		

Research Paper – Discussion

- Data Analytics Approach – agile process



Research Paper – Discussion

- Data Analytics Techniques (many explored)
  - *Text analytics / text mining*
  - *Predictive analysis*
  - *Visualization*
  - *Correlation*
  - *Aggregation*
  - *Regression*
  - *Cluster Analysis*
  - *Classification*
  - *Natural Language Processing (NLP)*
  - *Optimization*

Research Paper – Case Study Recommendations

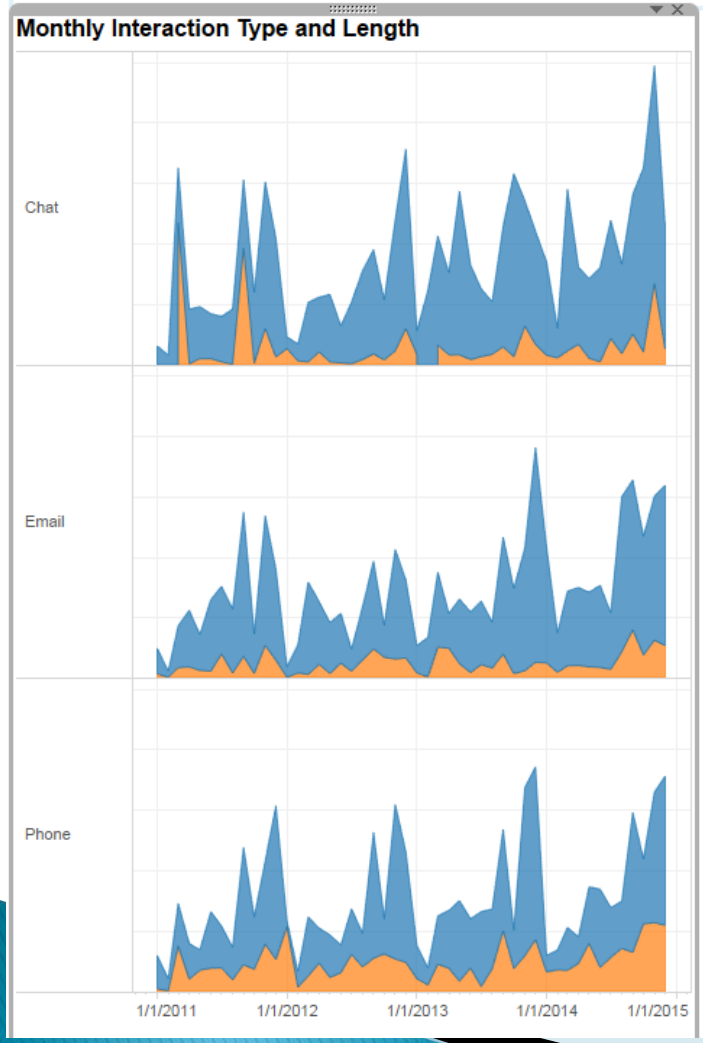
- Applying what was learned in discussion to Case Study. Technique recommendations are:
  - *Data visualizations* – this technique would be utilized to present real-time measures of docRM interactions.
  - *Predictive analytics* – this technique would assist in predicting future workload of service interactions.
  - *Text analytics (mining)* – this technique would allow the organization to leverage large amounts of unstructured data (email, docRM interaction comments fields).

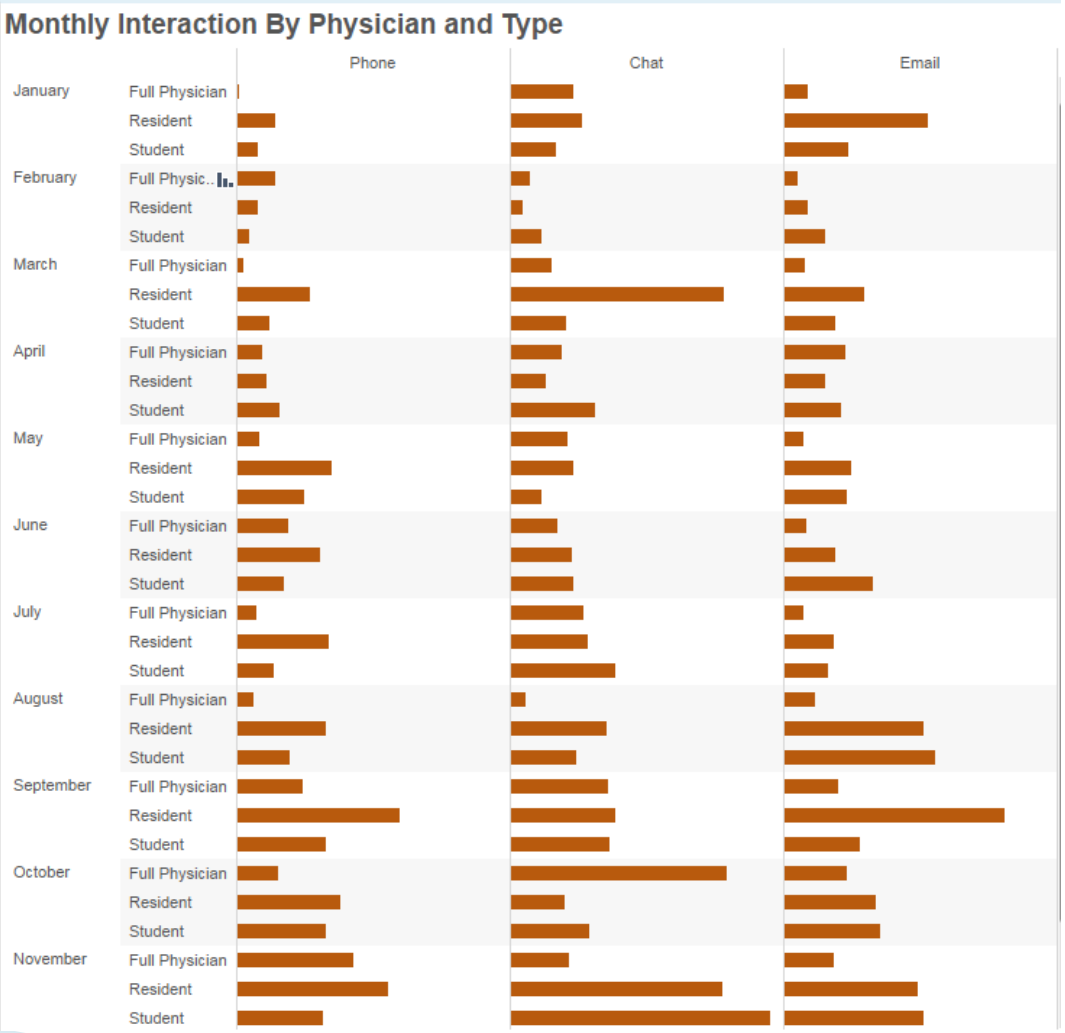
Research Paper – Case Study Recommendations

Areas	Recommendation	Description
Analytical Strategy & Approach	Phase the project with an initial goal of moving from maturity level 2 to 3.	This recommendation introduces moderate organization change and cost. Additional maturity steps should be considered at close of the project. Allows an agile, quick win approach.
Analytical Technique	(1) Data Visualization (2) Predictive Analytics (3) Text Analytics	Discussed in previous slide
Analytical Tool Suggestions	Tableau, Qliktech, OpenNLP. SAS.	These tools are suited to organizations needs and provide visualizations and analytical processing needs. Additionally, all data sources will be harvested directly as opposed to setting up a complete data warehouse. **OLAP ruled out due** to complexity.
Data Source(s)	docRM (CRM) & other internal data sources (email).	External sources to be exclude at this point due to lack of identified business needs. Data consists of both structure and unstructured data.

Research Paper – Case Study Recommendations

docRM Interaction Overview





Research Paper – Future Recommendations

- Further integration of external data sources – survey results, website comments, website traffic/usage logs.
- OLAP Database – implementation of a full data warehouse.
- Cloud Analytics – Advanced capabilities provided by big players

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/

Frederiksen, A. (2009). Competing on analytics: The new science of winning. *Total Quality Management & Business Excellence*. http://doi.org/10.1080/14783360902925454

Grimes, S. (2008). Unstructured Data and the 80 Percent Rule. Retrieved November 17, 2015, from http://breakthroughanalysis.com/2008/08/01/unstructured-data-and-the-80-percent-rule/

Reifferscheid, K. (n.d.). Research Project – Data Analytics. Retrieved from https://landing.athabascau.ca/pages/view/1325902/research-portfolio