Employee Survey Analysis case study

Sergei Ananyan, CEO, Megaputer Intelligence

Greg Talkington, HR Analyst, EDS







Business Situation

The most important assets of EDS are people.

- The main question: How do we build and maintain a loyal, engaged, productive workforce amidst
 - Re-organizations
 - Continuous re-skilling
 - Shifts in corporate priorities and culture



Enterprise Dialog Analysis

Employee Sources

- Team meetings
- HR systems
- **Employee surveys**
 - Company website

Client Sources

- Client satisfaction surveys
- Sales proposals
- Help desk calls



EDS Voice of the Employee (VOE) Survey

Purposes

- Employee suggestions, concerns, and comments
- HR and business measurement
- HR program evaluation



EDS Voice of the Employee (VOE) Survey

Unique Constraints

- Maintain the anonymity of the author
- Fairly and accurately convey the meaning of the author
- Protect the company from survey results taken out of context



Analysis of Open-ended Comments

Characteristics

- Disjointed, incomplete
- Repetitive
- Unique
- High volume
- Demographics
- Human emotion

Analysis Need

Adjustable thresholds

Key word (top-down)

Concept extraction

Principled reduction

Link analysis

Preserve the power of the author's words



Analysis of Open-ended Comments

"Analyzing employee opinions is like having a brief, intense, honest, one-on-one conversation 100,000 times in a row."

Survey Analysis through Text Mining





Survey analysis at EDS

- EDS performs employee survey analysis with Megaputer PolyAnalyst™ data and text mining suite
- Utilizes PolyAnalyst exploration engines
 - Link Terms
 - Text OLAP
 - Text Analysis
 - Taxonomy-based Categorization
 - Text Clustering
 - Link Chart
 - Snake Chart



Technology basis

- Text Mining is an automated multi-step process
 - Tokenization
 - Morphological analysis
 - Semantic analysis
 - Statistical or machine learning analysis
 - Decision Trees, Neural Nets, Association Rules, etc.
- To facilitate making good business decisions, the technology provides
 - Visual representation of results
 - Interactive drill-down to data
 - Report generation

Employee survey analysis results





Voice of Employee survey data

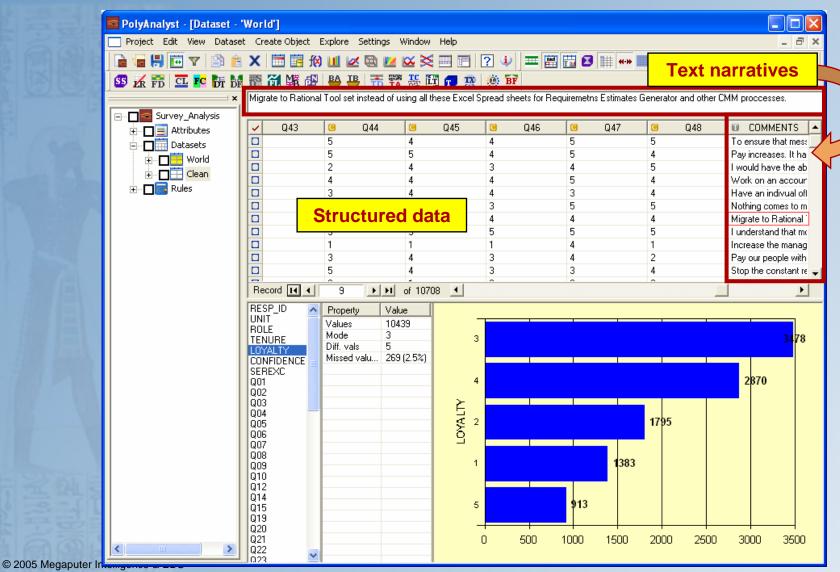
- VOE survey is anonymous
- Collects
 - Some demographics
 - Likert scale responses to about 40 questions
 - Free text comments

UNIT **Application Delivery ROLE** Individual Contributor Even if I were offered a comparable position with similar pay and benefits at another **TENURE** 5 to 10 years company, I would stay at EDS. 5 LOYALTY **COMMENT** Pay our people within their job code within industry norms and quit the If you could change one thing in policy of not giving raises with your day-to-day work to increase your job satisfaction and promotions. Its an old policy that needs productivity, what would it be? to die a painful death.

© 2005 Megaputer Intelligence & EDS Employee survey analysis



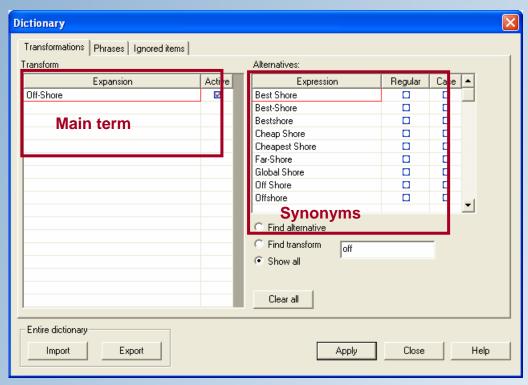
Text and structured data mix





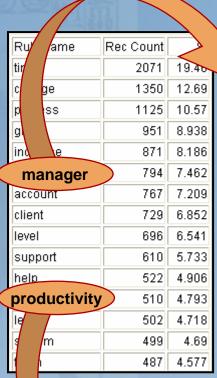
Data cleansing

- User edited domain-specific dictionaries
 - Abbreviations
 - Synonyms
 - Typical misspells
 - Stop-words
 - Inseparable phrases
- Semantic dictionary



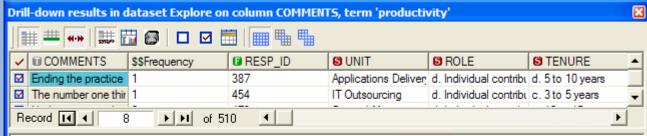


Extracted keywords





I would have a direct <mark>manager</mark> who actually knows what Im doing and what my skills are as opposed to the current situation where I am randomly assigned to various projects with different project <mark>managers</mark> who then report to my Technical Delivery Team <mark>Manager</mark> who doesnt know my skills/performance directly yet delivers my performance review.

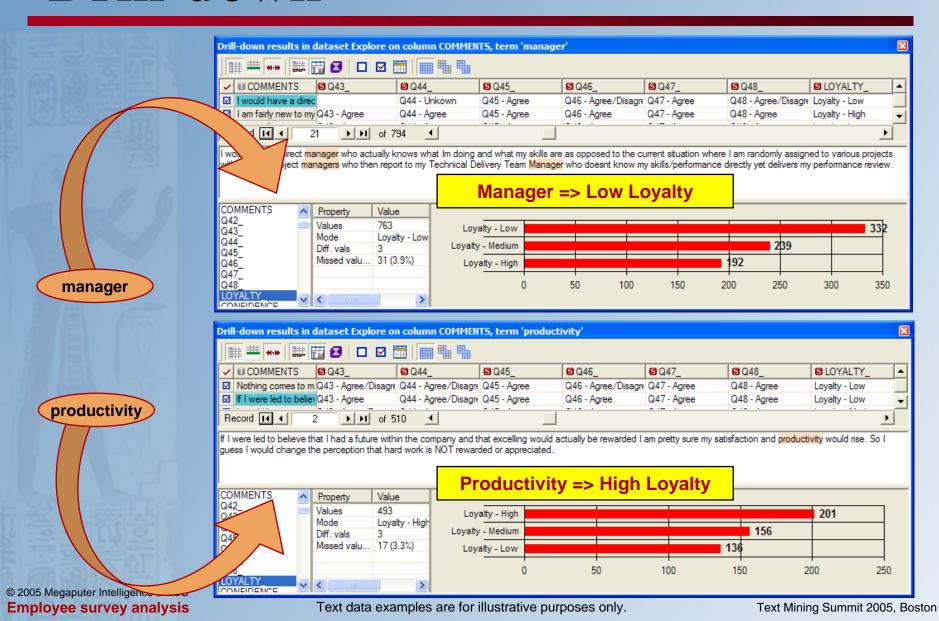


Ending the practice of off-shoring our work would increase my job satisfaction and productivity since I would be more assured of finding challenging work once my current assignment was completed. I understand the reasons behind BestShore but I dont agree with it at all.

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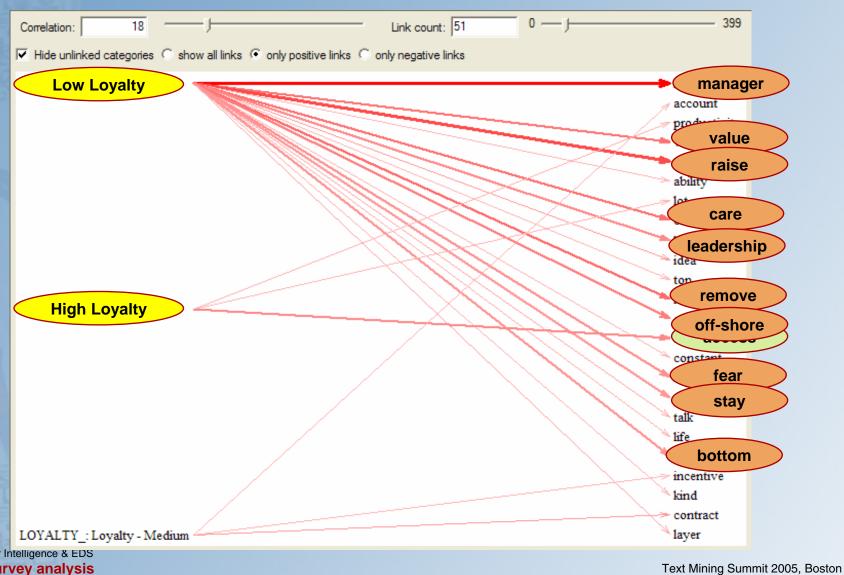


Drill-down





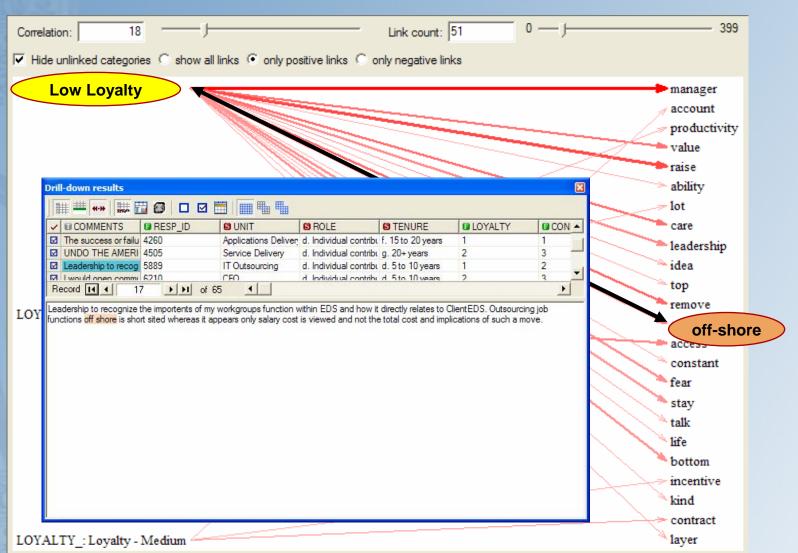
Correlation Analysis: Link Chart



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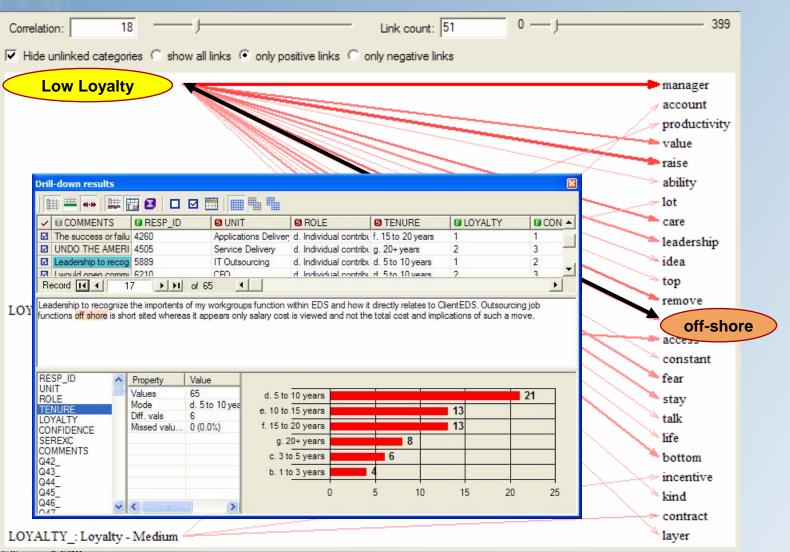
Employee survey analysis





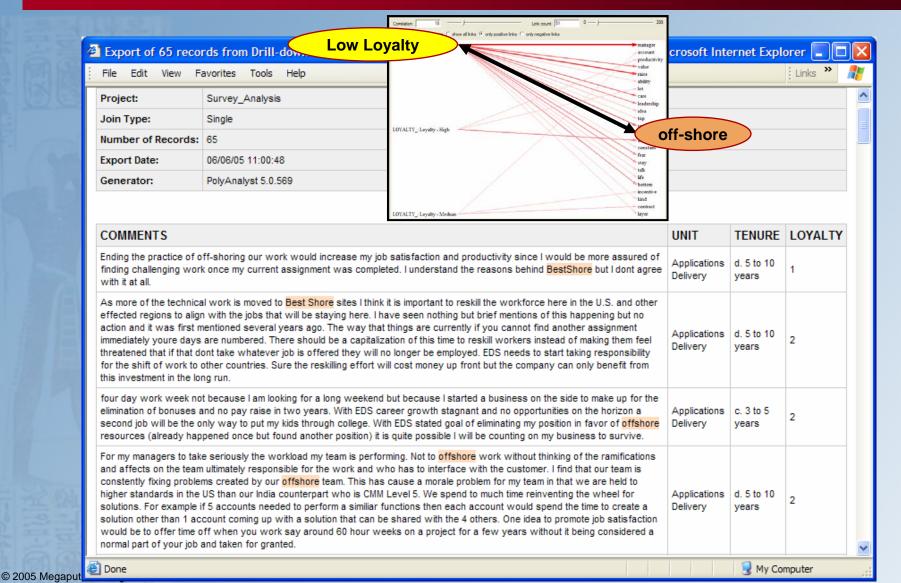
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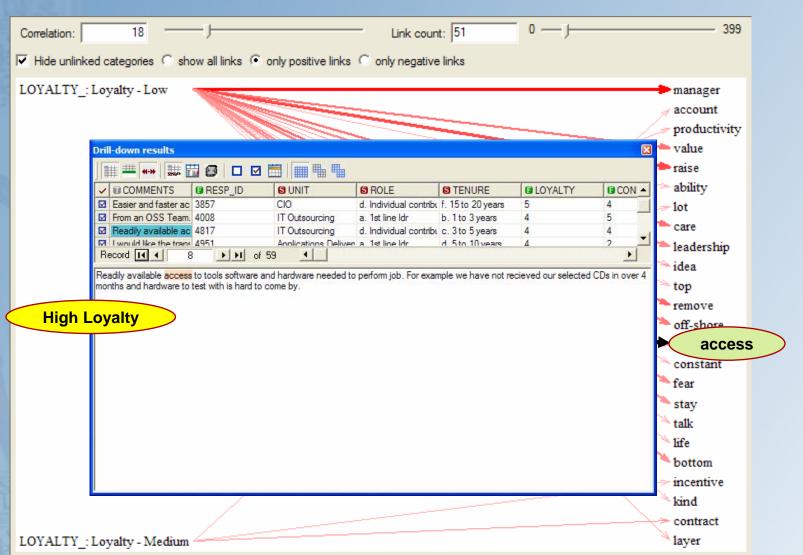


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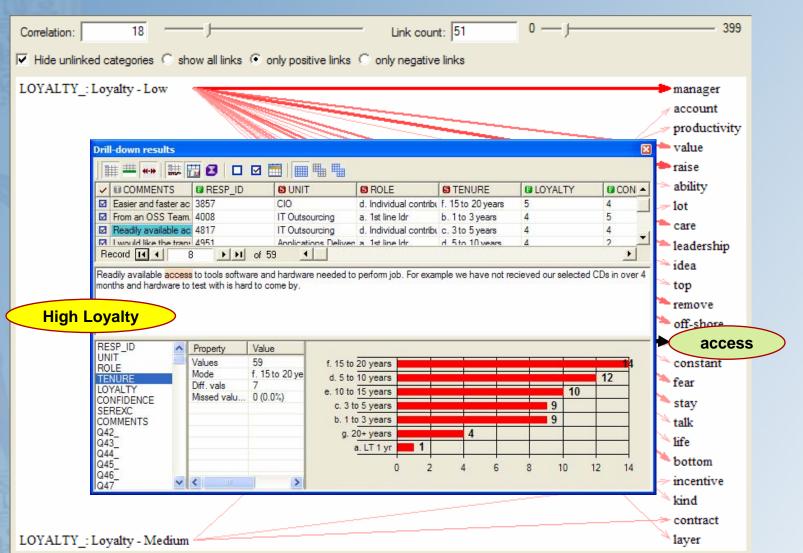
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Employee survey analysis

Text data examples are for illustrative purposes only.

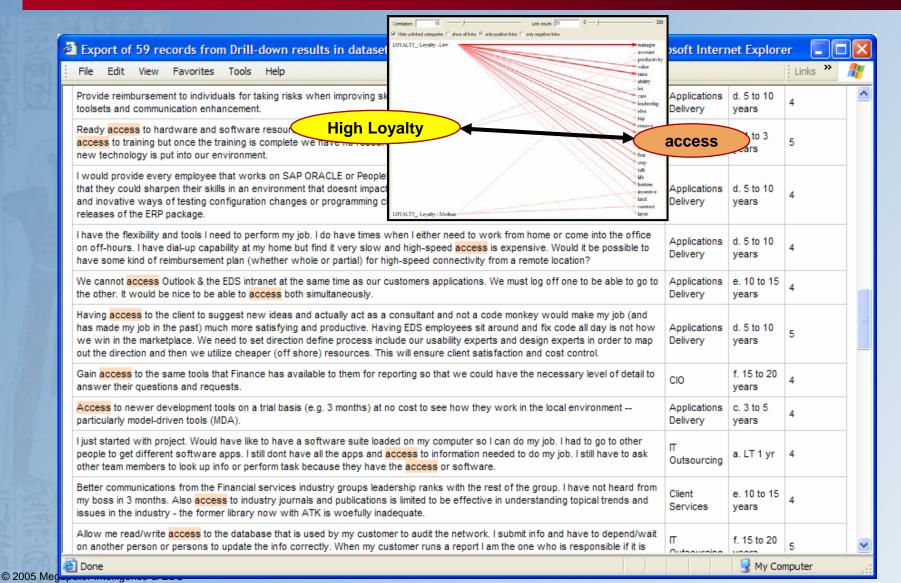
Text Mining Summit 2005, Boston





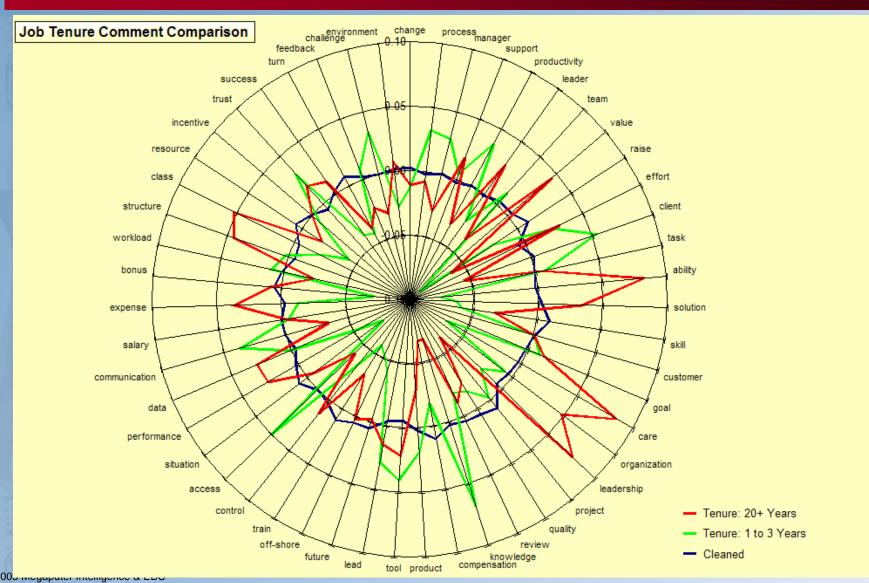
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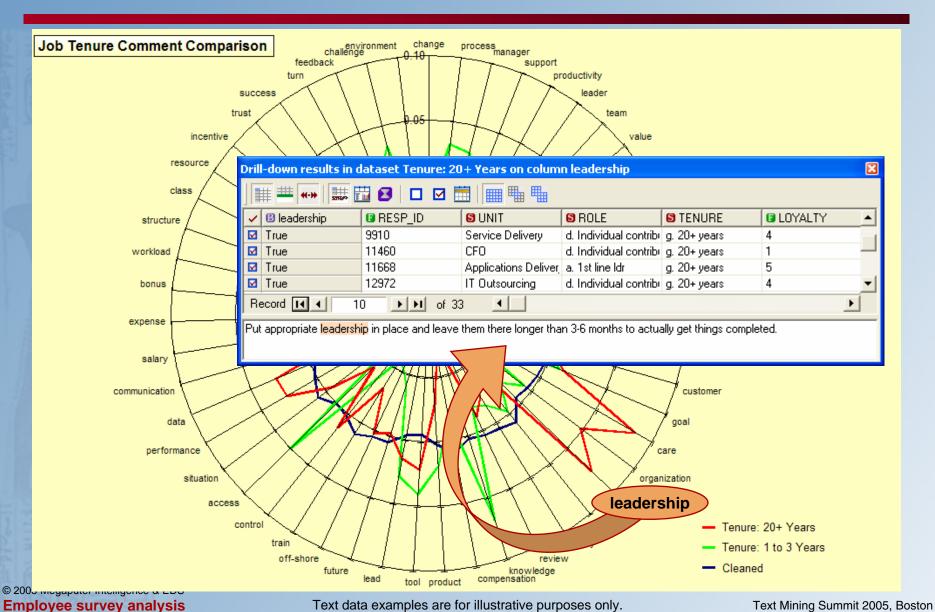




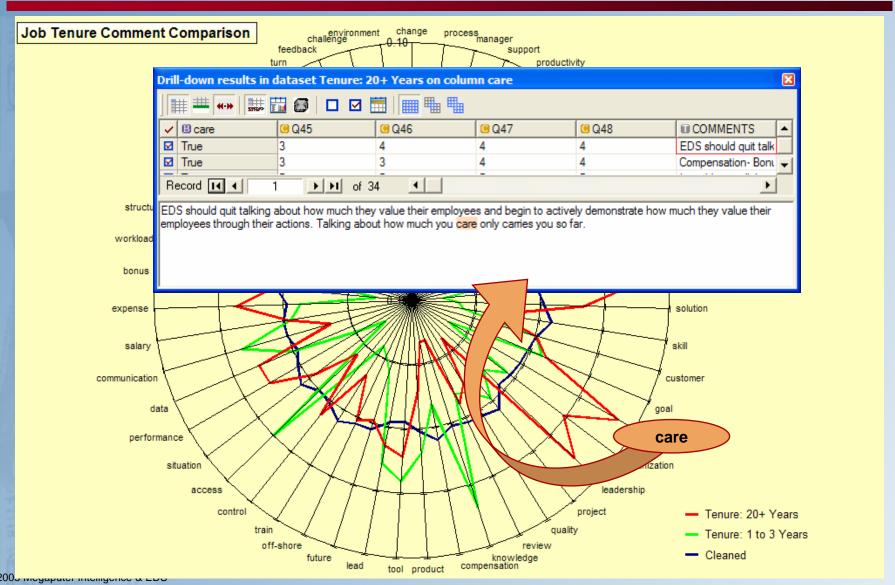
Tenure => Comment: Snake Chart



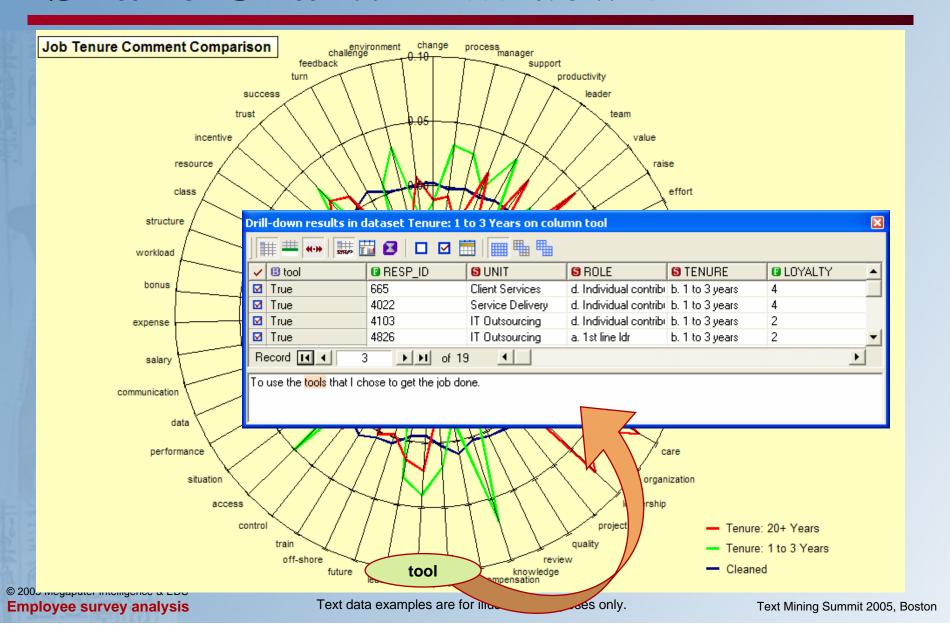




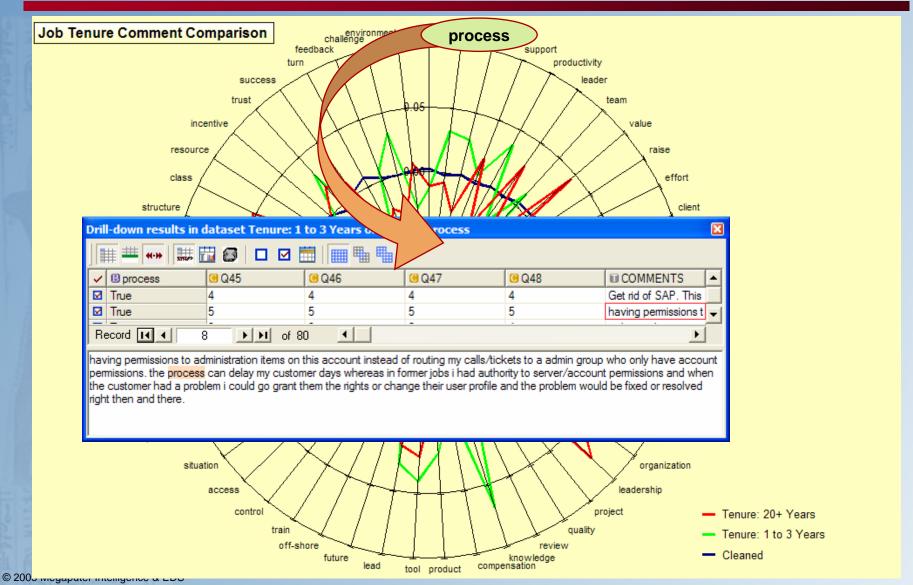




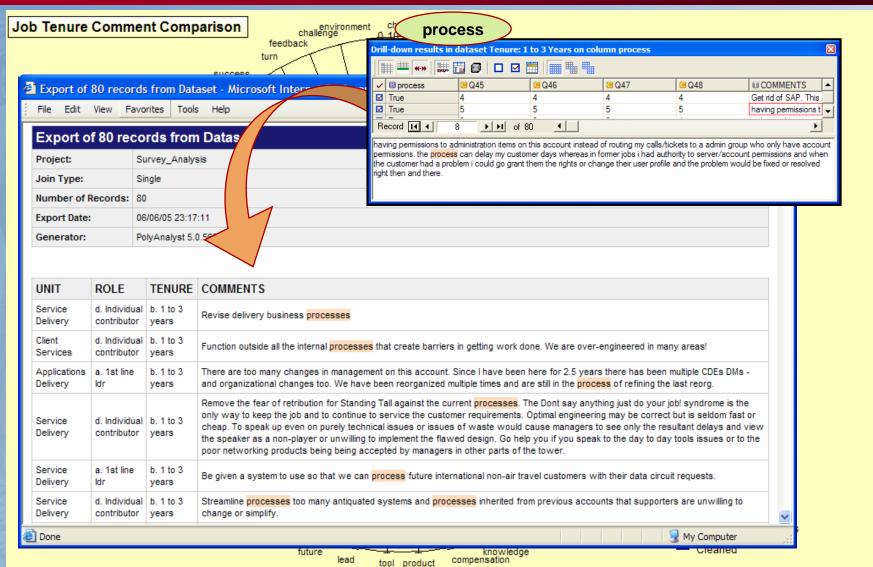






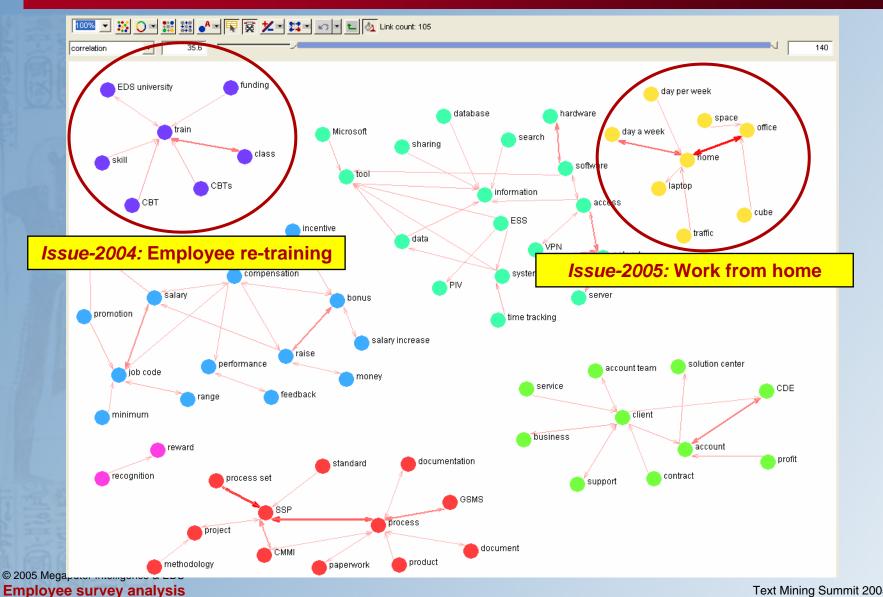






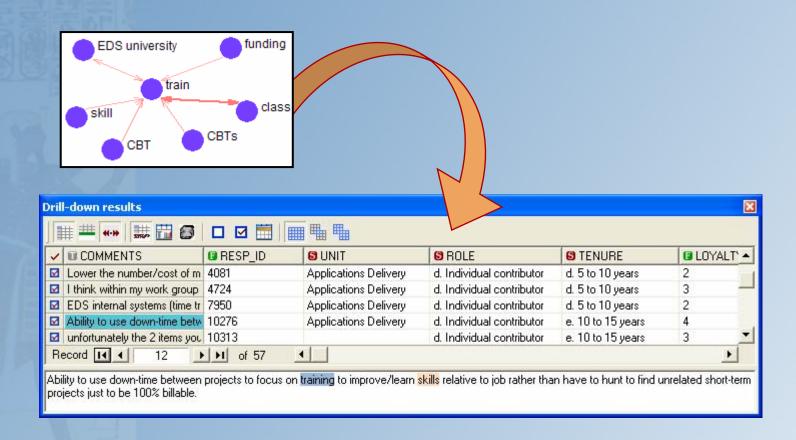


Link Terms



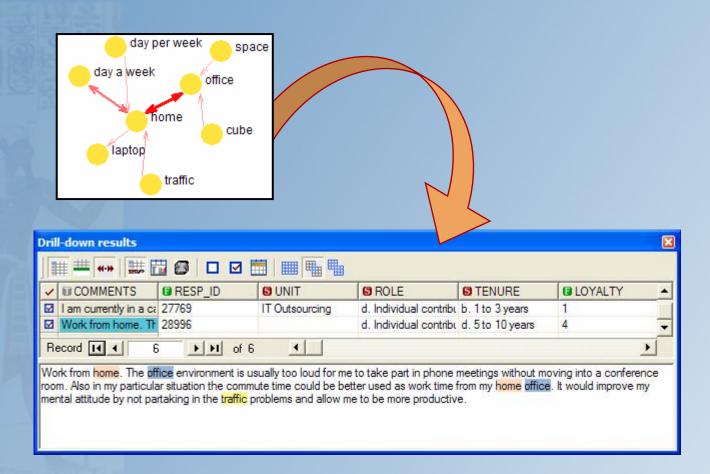


Link Terms: Drill-down



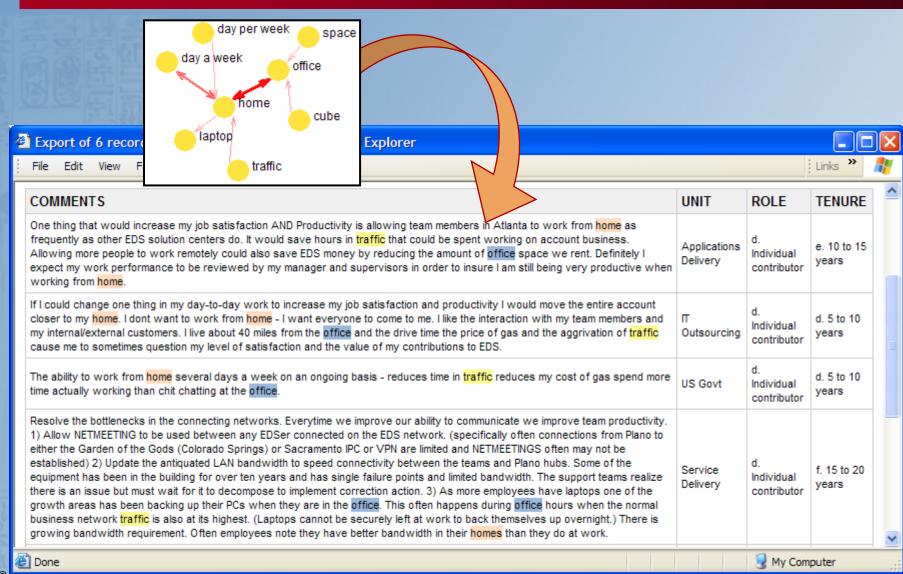


Link Terms: Drill-down



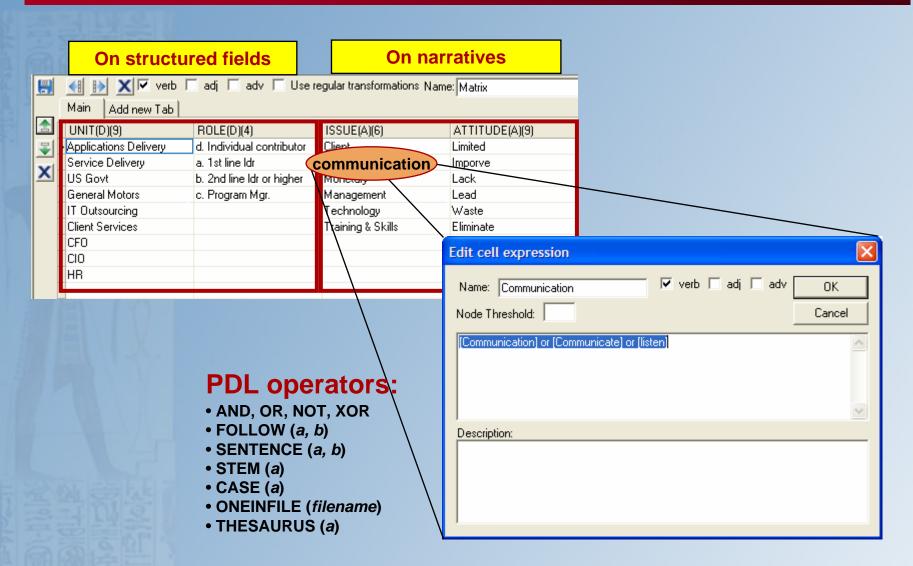


Link Terms: Reporting





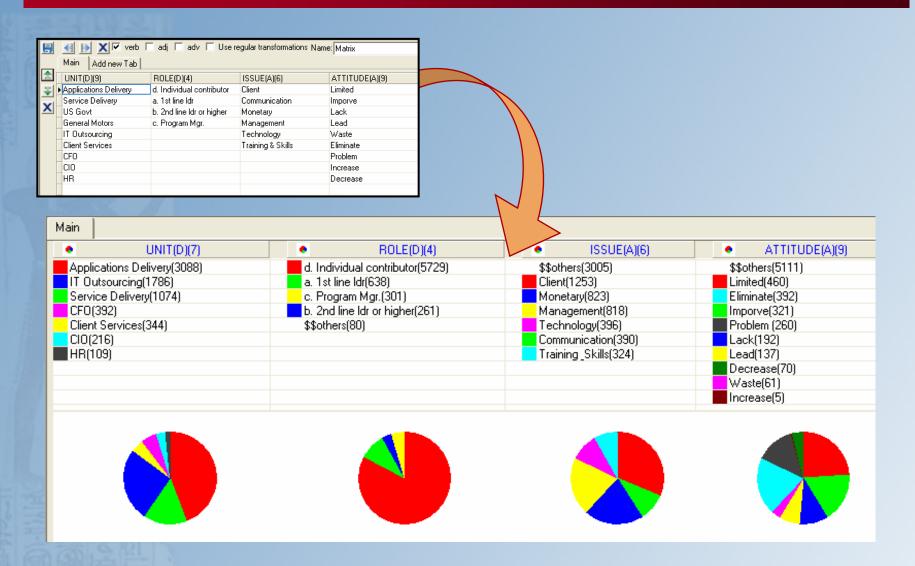
Text OLAP: Matrix definition



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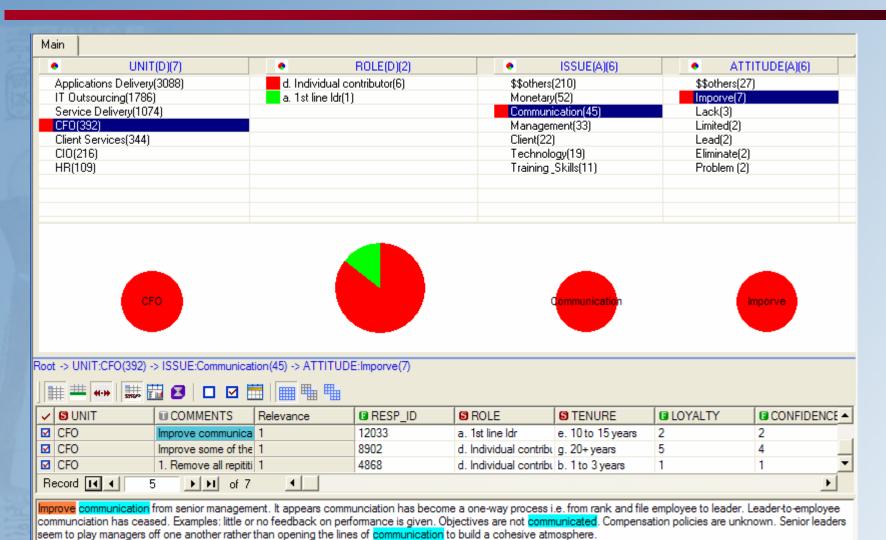


Text OLAP: Results





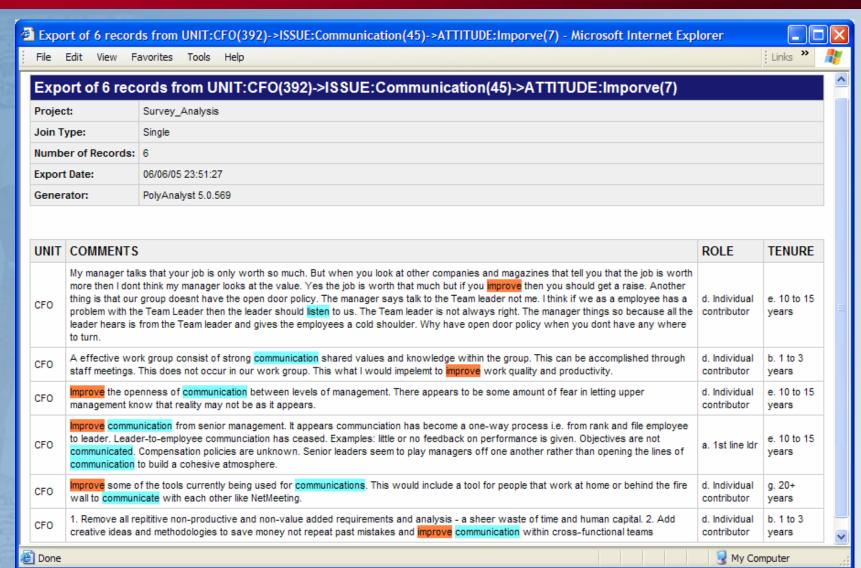
Text OLAP: Drill-down



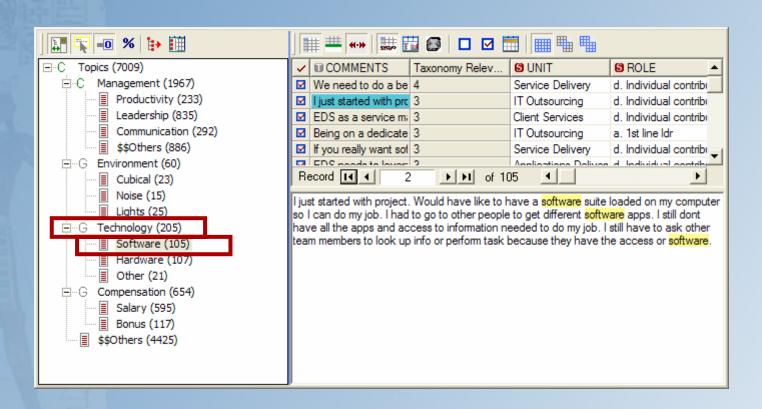
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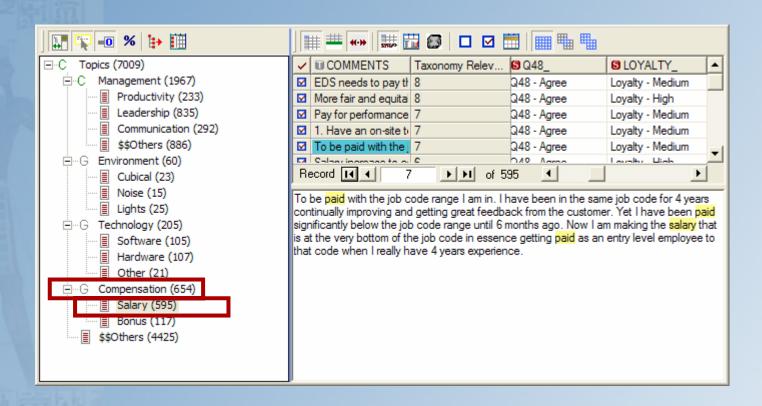
Text OLAP: Reporting



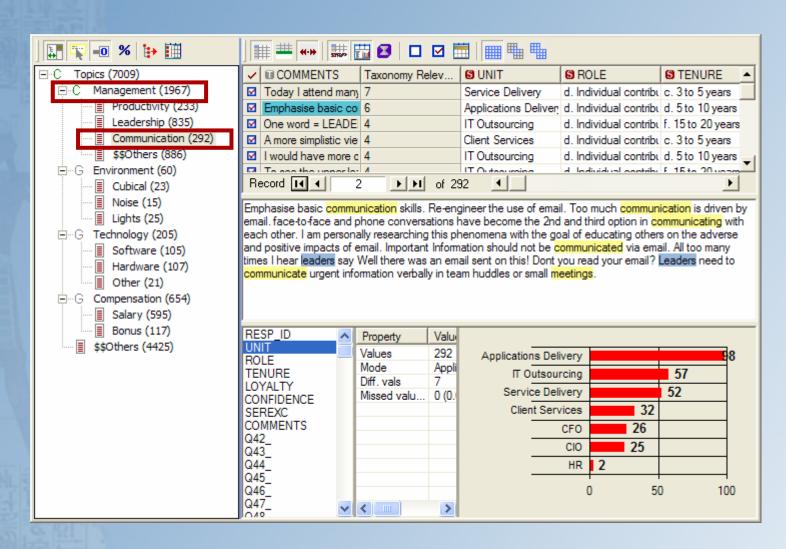




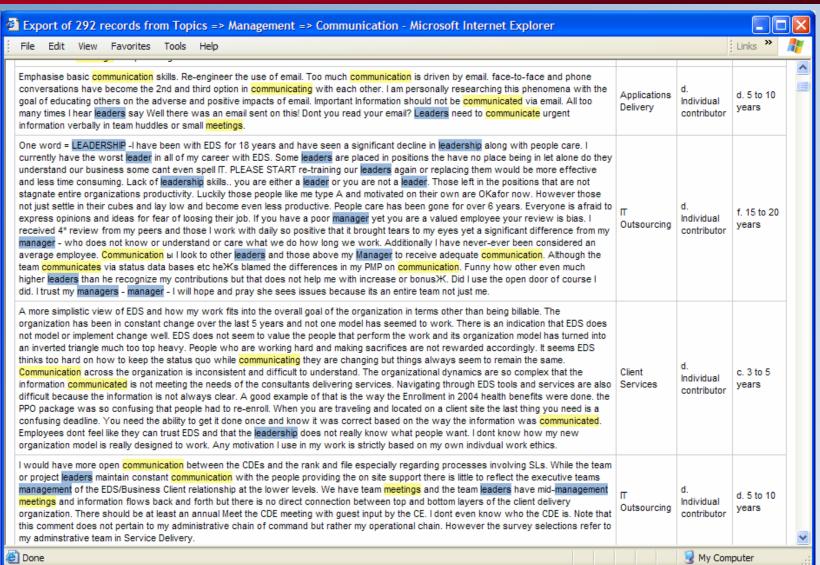












Benefits of text mining





Benefits

- Dramatic cost reduction, quality and speed increase compared to manual statistical analysis
- Immediate visual perception of key problems reported by customers
- Objective data-driven analysis
- Automated monitoring of known problems and timely discovery of newly developing issues
- Utilization of 100% of available data



Enterprise Dialog Analysis

- Text Mining helps derive insights from
 - Employee surveys
 - Customer surveys
 - Call Center data
 - Customer support correspondence (e-mail)
 - Customer complaint cards
 - Repair notes
 - Incident reports

Further Questions?

Sergei Ananyan (812) 330-0110 sananyan@megaputer.com

Megaputer
Your Knowledge Partner

Greg Talkington (972) 797-6088 greg.talkington@eds.com

