Contextual Intelligence as a Driver of Services Innovation

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Harnessing Context

- Content and context analytics infer relationships among information to construct a **Personal Semantic Network** for each individual.

**User model:**
- Patterns, Interests, Behavior, Relationships, Personality…

**Use it to infer:**
- Current Situation (Venue, Who I’m with, What I’m doing), and Likely Future
Example: Psychological Profiles

- Online behavior is **highly correlated** with personality variables
- Extract and classify textual features from online behavior to build psychological profiles as indicators for *future* behavior

### Personality Traits

- Neuroticism
- Agreeableness
- Conscientiousness
- Extraversion
- Openness
- Perceived Stress
- Self-Assurance
- Overall Mood/Emotion

![Graph showing accuracy over number of test email messages]
Contextual Recommendations

combine multiple factors to drive decisions

- Distance
- Purchase History
- Predicted Activity
- Others ...

Alt. Rankings:
- Option 25: 0.77
- Option 16: 0.64
- Option 3: 0.60
- Option 49: 0.57
- Option 8: 0.39
Digital Nurse Assistant:
- Contextual information
- Improve clinical decisions
- Reduce errors
- Increase patient time

Sentiment Analysis & Topic Detection in Social Media:
- Customer intelligence
- Emerging event detection

Lean Service Innovation

Police Operations
- Enable evidence-based decisions

Improper Payment Amounts

Fraud, Waste & Abuse:
- Health insurance
- Transportation
- Credit cards
- Social services

Parking Enforcement:
- Shared real-time context for coordinating & documenting activities
Lean Service Innovation

Call centers
- Mining audio & transcripts for learning
- Real-time analysis & intervention
- Intelligent call routing
- QA, training, call center analytics

Transportation services
- Personalized rider services in metro area transit systems
- Participating vendors create offers
- Riders get real-time contextual recommendations

Personalized services for the car
- Proactively infer user’s intent, anticipate needs, take action
- Smart information feeds & prioritized e-mail, Facebook, Twitter, texts, etc
- Interactive calendar assistant
- Understands when driver’s attention is available (e.g., at red light)
Thank You!