

FinTech Business Transparency

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Digital Business Dilemma

The Iceberg Challenge



MANAGEMENT AND
OPTIMIZATION OF THE
BUSINESS DEPENDS ON
FULL VISIBILITY ABOVE &
BELOW THE WATER LINE

Business Performance
Client Acquisition & Service

Applications
IT Systems
Service Providers
Networks
Security

- Business success is heavily reliant and built upon technology
- Complex, multi-layer, multi-tier, and often dynamic systems
- Many teams involved in delivering end-to-end business service
- Technology – Business communication gap

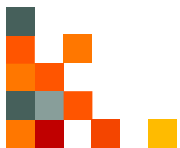


Frictionless Customer Choice

Visibility of end-to-end service critical for customer retention

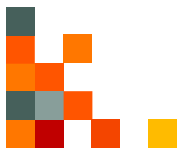


- DMA / Brokerage
- Wealth Management
- eBanking
- Payments & Remittances
- eCommerce



The Hard Questions

Multi-dimensional across business, customer, technology

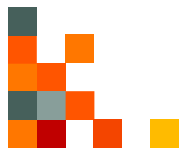


New Levels of Transparency are Needed

To effectively understand, optimize, and safeguard the business



- Algorithmic business control
- Foundation for security
- Compliance and regulatory requirements
- New Customer services
- Transaction uniqueness
- Correlated information for decision-making



It's Complicated!

End-to-end transparency is hard



- Transactions morph, split, and change state
- Traverse applications of various origins, architectures
- Diverse logging and monitoring approaches
- Blind spots
- Multiple paths for every interaction

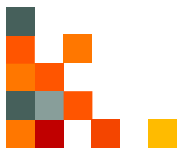


...And Getting Harder

Dynamic environments make every transaction a snowflake



- Complex, algorithmic triggers (“machine-time”)
- Hybrid and cloud environments
- Modularity
- Microservices
- Agile deployments
- Component mobility



Actionable Business Insight

Identifying the digital business levers



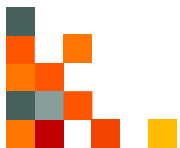
- Direct correlation between business performance and technology performance
- Anomalous behaviors
 - Venue or provider performance
 - Customer activities
 - Business fluctuations from prior periods



Digesting the Iceberg



- Data acquisition
- Data aggregation
- Data analysis
- Baselining and anomaly detection
- Machine learning
- Context-based visualization
- Data service provider



Approaches and Considerations

Data Acquisition and Aggregation



- Data Quality**
 - Absolute coverage
 - Time-stamping
 - Error free
- Complexity**
 - Data disparity
 - Geography
 - Multiple 3rd parties
- Scale**
 - Message rates
 - Data volumes
 - Resource footprint
 - Multiple consumers

- Buy vs Build**
 - Time to implement
 - Resource
 - Trust / independence
 - Cost
- Data Sources**
 - Logs
 - Agents
 - APIs
 - Wire Data



Approaches and Considerations

Intercommunication data is a key, if not primary, component



Complete, Accurate & Trusted Data



Time Synchronization and Hardware Time-stamps

Low Intrusion, Impact to Application



Independent & Authoritative Record

Reveals True Experience of Client

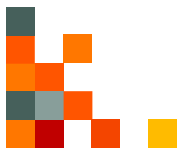


Understand the Impact of Network & Infrastructure Events

Contains All Transactional Data & Cyber Threats

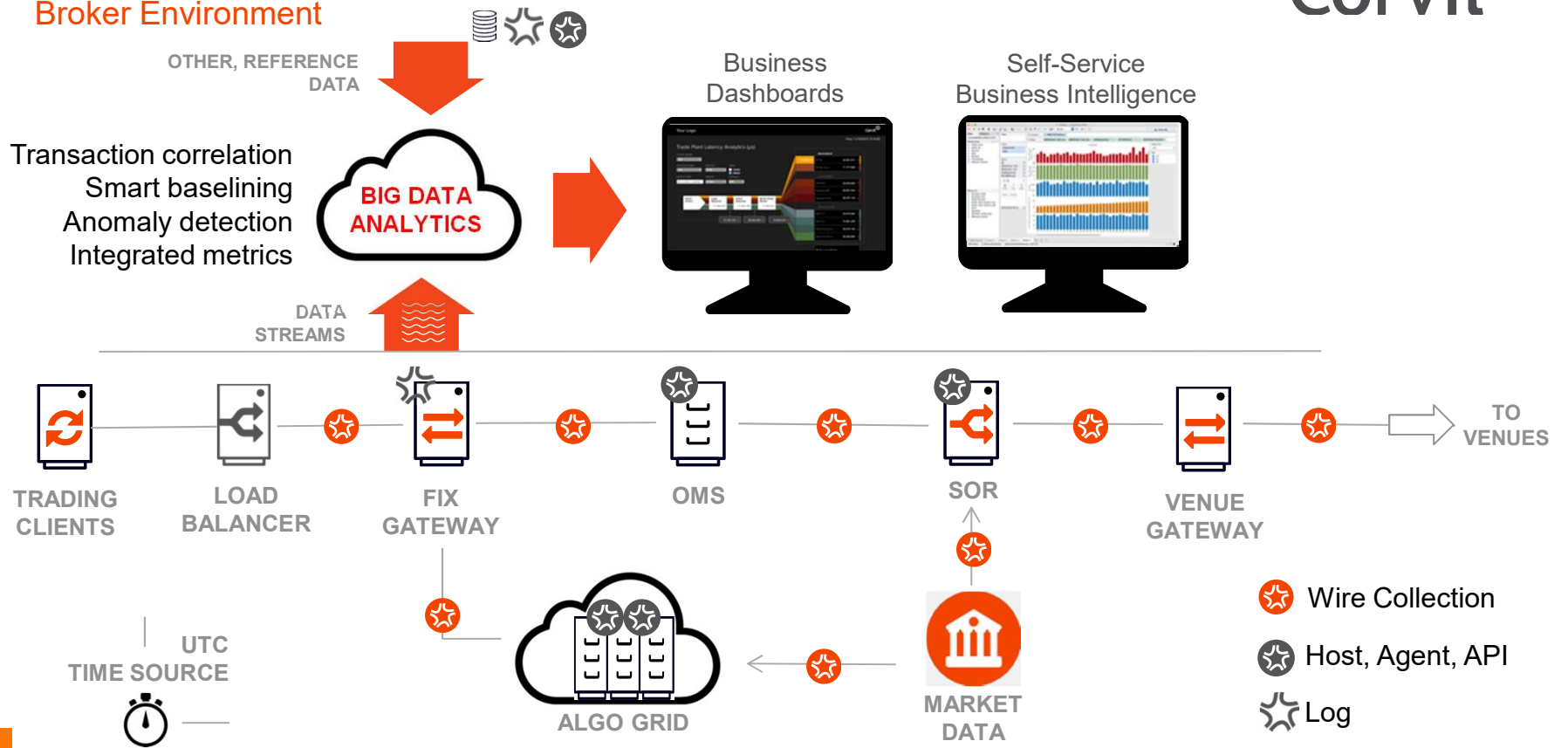


Integration of User Experience, Business Context, Technology

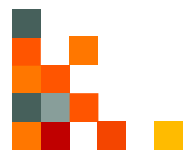


Example Architecture

Broker Environment



CONFIDENTIAL



Equities Business Dashboard



CLIENT:

ALL CLIENTS

PERIOD:

LAST 24 HOURS

Current Historic

PRIOR PERIOD

TRADING REVENUE \$18,731,000 +3 %	TRADING PROFIT \$ 1,621,000 M 3 %	ORDER TO FILL RATE 80 % -.3 %	TRADE VOLUME 9.28 M +2.7 %
ACTIVE CLIENTS 741 +1 %	AVG CLIENT LATENCY 192 μs -1 %	AVG MARKET DATA GAP % .021 % 3 %	AVG MARKET DATA TICK TO ORDER LATENCY 12 μs -3 %

PRIOR PERIOD

Top Clients

Trade Volume by Client

CLIENTS	TRADE VOL	TOT \$	O2F %
Bluefin Captial	2.2 M	1.4 M	94%
RJH Internatio...	1.3 M	1.2 M	92%
Jericho Capital...	1.0 M	980,600	89%
Wright Investor...	.822 M	950,450	70%

Top Venues

Trade Volume by Venue

VENUE	TRADE VOL	TOT \$	O2F %
NYSE	2.2 M	1.4 M	94%
NYSE Arca	1.3 M	1.2 M	92%
Nasdaq-BX	1.0 M	980,600	89%
BATS-Y	.822 M	950,450	70%

Low Performing Clients

Average Latency by Client

CLIENTS	AVG LATENCY	TOT \$	O2F %
Welch Group	4023	30,000	58%
Zebra Capital	4657	284,000	59%
JR Investors	4897	210,000	57%
Egret Investments	4753	209,546	55%

In Conclusion



- Every transaction is unique and matters



- Performance of transaction AND business context of transaction



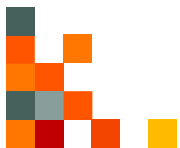
- Instrument for “machine-time” – when things go wrong algorithmically, they go very wrong



- Cloud has a role



- Shared service for integrated business and IT data





Corvil

Thank You