Data-Centric Transformation Made Possible

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Adoption and Integration of Semantic Capabilities

Unlocking the Vision of the Financial Data Transparency Act

Michael Atkin, Associate, Semantic Arts

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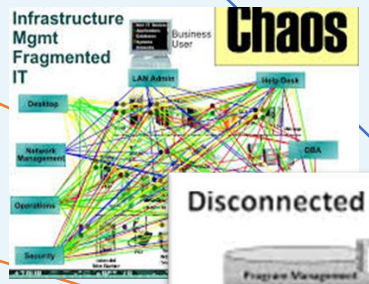
Ancient Technology *Leading to* **Wrong Outcomes** *Compounded by* **Obstacles**

Proprietary Software
(customized code - not reusable)

Rigid Schemas
(relationships explicitly described)

Quest for Magic Solutions
(big data, ML/AI, micro-services, etc.)

Database Proliferation
(data is copied and cloned)



Brittle Infrastructure
(fear of distributing hornets' nest)

Organizational Impatience
(myopic focus on short-term)

Fragmentation is a Liability

Technical Debt
(rigid tables, joins and foreign keys)

Inconsistent Business Rules
(and not machine-readable)

Lineage Challenges
(untraceable system dependencies)

Clear Rationale for Change

Identity Conflicts
(transformed across many systems)

Single Version of Truth
(silos and multiple source exist)

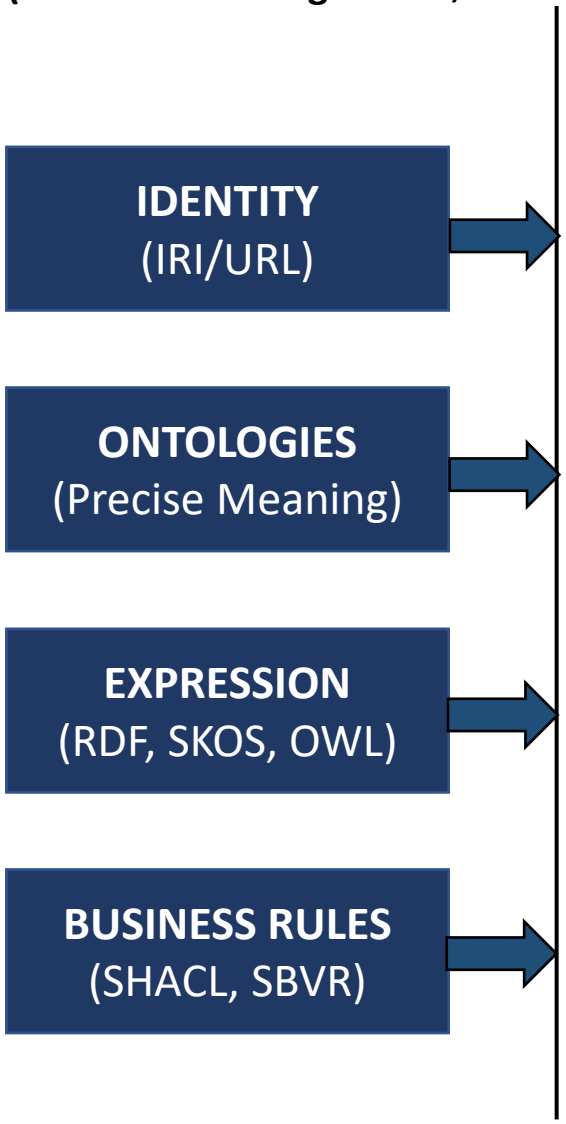
No Shared Meaning
(definition and mapping conflicts)

Requirements-Led Design
(hard-wired for one customer)

Massive Canonical Model
(too complex to build)

Semantic Standards

(Essential Building Blocks)



Foundational Capabilities

- **QUALITY** *(mathematical validation)*
- **CONCEPT REUSE** (*shared meaning)*
- **CONTEXT** (*identity + meaning + time + source)*
- **ENTITLEMENT** *(datapoint access control)*
- **LINEAGE** *(technical and business)*
- **GOVERNANCE** *(simplified and embedded)*
- **EXECUTION** *(machine-readable)*
- **CONTINUOUS TESTING** *(rules-based)*

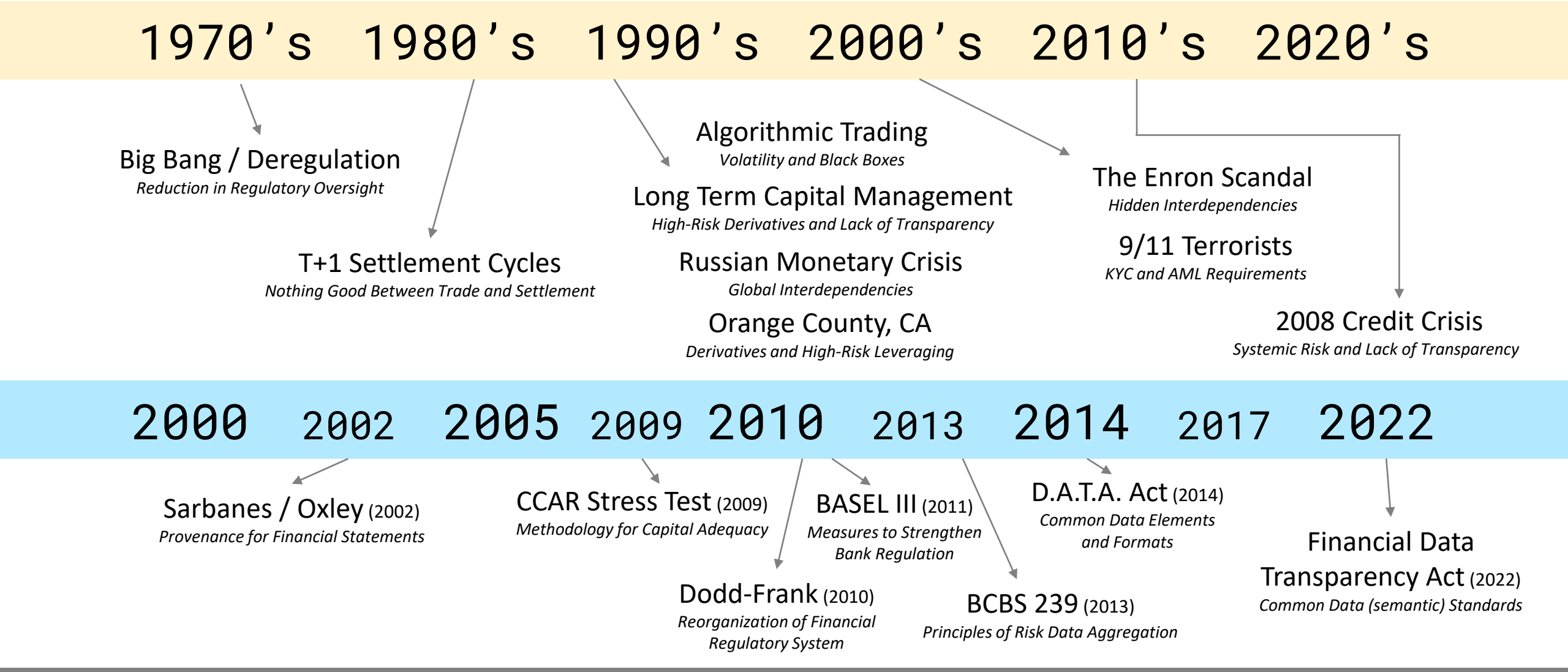
Value Drivers (why)

- **Cost Savings** *(automation, operational resiliency)*
- **Control Environment** *(compliance, simplification of governance, reporting)*
- **Capability Enhancement** *(flexibility, data science, data quality)*
- **Business Goals** *(customer service, product innovation, customer 360)*

Use Cases (what)

- **Data Integration** *(lock down meaning, resolve identity)*
- **Connected Inventory** *(digitization, system interoperability, supply chain)*
- **Access Control** *(privacy, cyber security, entitlements)*
- **Data Discovery** *(enterprise search, ad hoc query, risk management)*

Historical Perspective



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SEMANTIC ARTS: BUILDING BLOCKS OF LINKED RISK

Instruments

- Identification
- Classification
- Description (rates, dates, features, schemes, provisions)
- Value (i.e. price, date, time)
- Calculate (volatility, correlation, duration, tax)
- Maintain (corporate actions)

Entities

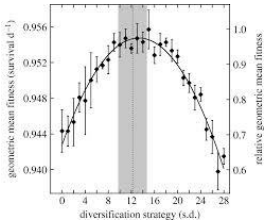
- Entity type (legal persons, formal organizations, corporations, partnerships, affiliates, trusts, functional, etc.)
- Ownership structures
- Controlling relationships

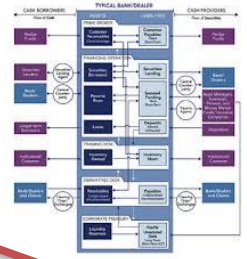
Obligations

- Issuance process
- Trade and execution
- Guarantee
- Allocate and administer
- Clear and settle
- Transfer

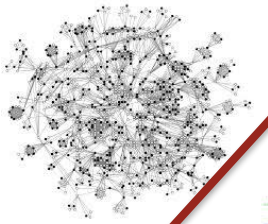
Holdings

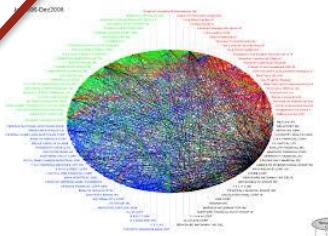
- Firm portfolio (individual entity risk)
- Corporate structure (organizational risk)
- Industry wide (systemic risk)

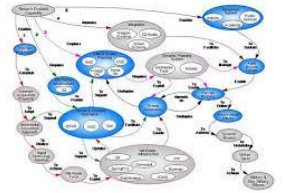




- Degree of interconnectedness
- Transitive relationship
- State contingent cash flow
- Collateral flow
- Degree of centricity
- Funding durability
- Leverage & liquidity
- Guarantee & transmission of risk
- Degree of diversification







Contact Us (www.semanticarts.com)

JT Metcalf
Chief Administrative Officer

(970) 490-2224Work
(970) 218-2250Mobile
james.metcalf@semanticarts.com
Fort Collins, Colorado
james.metcalf@semanticarts.comIM

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