



Unstuffing the Keyhole

-- *The Implications of Blockchain in the Age of Digital* --

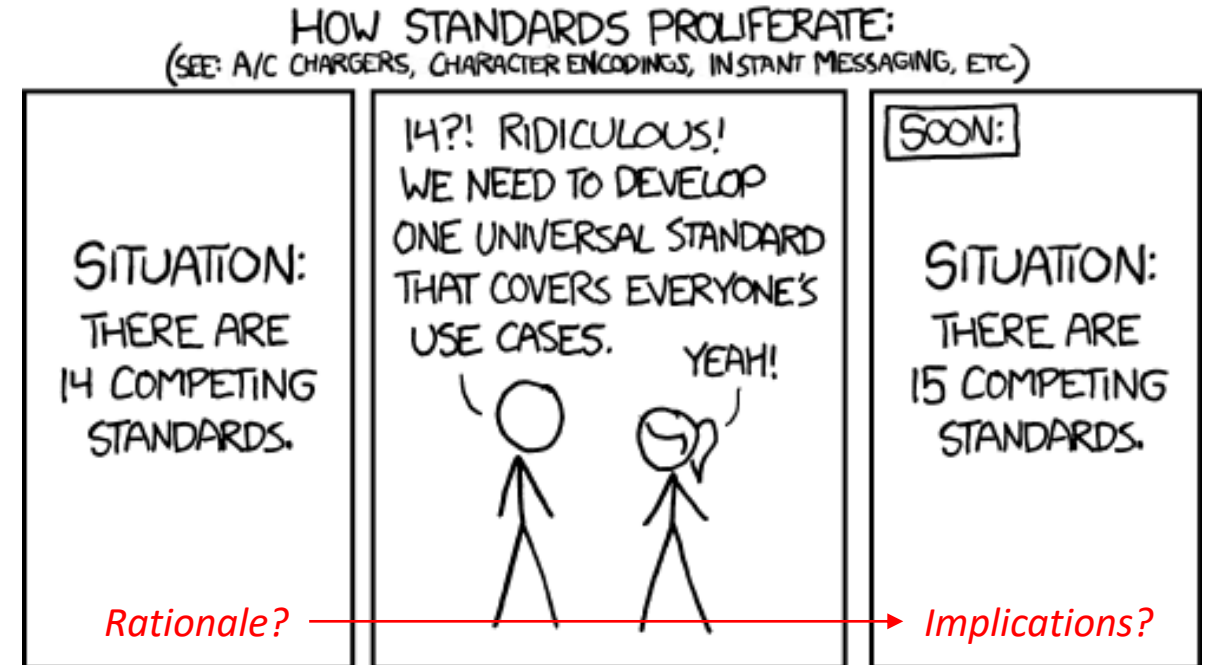
Digital transformation advancements changing the Metaverse discussions—and the questions asked

March 10, 2022

Framing Our Discussion

*Standards are mandatory pathways to interoperability—data, systems, networking, regulatory compliance, applications / API’s—yet they represent an eventual commodity, a disintermediation of competitive locks-in, and an indefensible value or innovation differentiator. “Standards innovation” demands that solutions be both **adoptable** (i.e., today’s demands) and **adaptable** (i.e., tomorrow’s realities).*

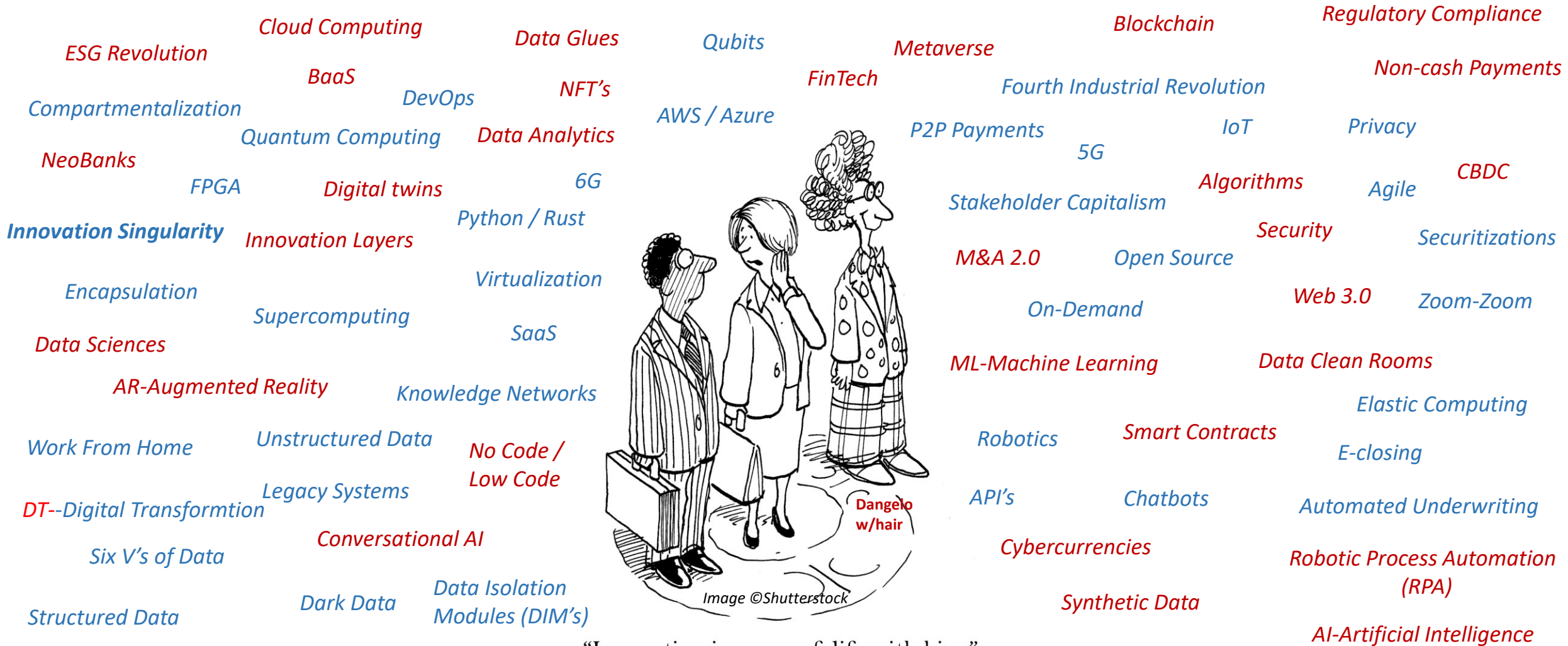
- Where are we today—putting business context to technological innovation / use cases
- Laying a foundation for core competencies
- Transform the organizational mindsets and culture to align with **“Digital Demands”**



Source: xkcd.com/927/

*“We are quickly moving away from learning pilots and into **compartmentalized, layers** of technological “stacks” designed for changing business, ESG, and ecosystem **transformations.**”*


Innovation overload has never been greater—new ideals, principles, solution sets, and vendor offerings—creating industry FOMO and confusion



“Innovation is a way of life with him.”

Context: The World We Live and Work in has Changed Standards Focus

What it is and why it is important, a little context of what has transpired may be useful to level set “what is transpiring.”

	Industry 3.0 Start of 2011	Phase Shift 	Industry 4.0 Start of 2022
Microprocessor Speed / Transistors	1200 M		>18000 M
AI Chipsets – Speed	N/A		> 350% increase/yr.
– Power	N/A		3% prior version
– Size	N/A		<10%
Storage Market (EB = Exabyte, 10 ¹⁸)	<300 EB/yr. (magnetic)		>1800 EB/yr. (SSD)
Number FinTech Vendors	<200		>13,500 (US only)
Number of RegTech Vendors	<20		>450
AI Revenue	<\$150 M		>\$150 B >\$270B (2026)
Business Value of Blockchain Technology (Gartner)	Not Significant		\$176 B (2025) \$3.1 Trillion (2030)

Primary Sources: Nvidia, IBM, WSJ, Financial Times, Bain & Co., Gartner

Context: Financial Services and Banking Organizations (FSBO's)

Any number taken out of context, can shift our thoughts and industry direction. FSBO's now realize that the premise of data control has placed them at a disadvantage. The data discussions and interoperability is about inclusion, layers of capabilities supplied by non-financial firms, and curation and governance standards that ensure bankers, et al remain innovatively relevant.

220-260

FDIC banking institutions are lost each year for over 25 years

less than **35%**

of the consumer's financial data is controlled by FSBO's

estimated **\$350 B**

in 2022 to be spent for compliance

over **\$290 B**

in the last decade in regulatory enforcement actions

over **50%**

of millennials are digital banking users

more than **60%**

of consumers aged 18 to 35 do not have credit cards

over **85%**

IT spending in 2021 was digital

over **1.4 B**

consumers actively use mobile payments or digital wallets

over **40%**

of the \$1.5 T of financial revenue controlled by non-FSBO firms

nearly **50%**

of bank revenues are derived from commodity solutions

over **81 M**

blockchain digital wallet users

nearly **45%**

of FSBO IT budgets in 2022 will be spent on non-legacy

Primary Sources: Genpact, McKinsey, Business Insider, ABA, MBA, FDIC, Deloitte, Gartner, Money Under 30

Context: Mortgage Industry

The mortgage industry while embracing standards, has not understood how to best use these digital directions. Often firms lack “roadmaps” of how information will be used, the costs associated with technologies, the demands partner relationships place on overhead, the reskilling necessary to implement, and the customer preferences driven by oceans of big data.

Illustrative Ranges

- What were the costs typically experienced (2019-2021)?

Cost to Originate → \$4,200-\$5,600

Underwriting → \$500 to \$800

Closing → \$500 to \$900

Avg. Loan Production Costs 2022 → **>\$8,000?**
2007 → **<\$4,000**

What is the cost for the investor to acquire?

Was this due to risk mitigation?

- The practical application of technology that leverages blockchains is often missing the “why” of business drivers. Data and regulations kept competition at the borders—**today a false flag.**
- The cost increases to “digitize” did not streamline processes or governance. Digitization was an expense needed to compete, an entry fee if you will. **Mortgage/banking are commoditized offerings.**
- **Blockchain as an enabler**—not an end solution—requires a comprehensive rethinking of value at every step of the mortgage and banking solution sets.

Context: The Mortgage Trends Past, Present, and Anticipated Future

The number of banks shrinks, the market share of non-banks rise, the digital base expands, and costs rise across commodity products.

Chart 1

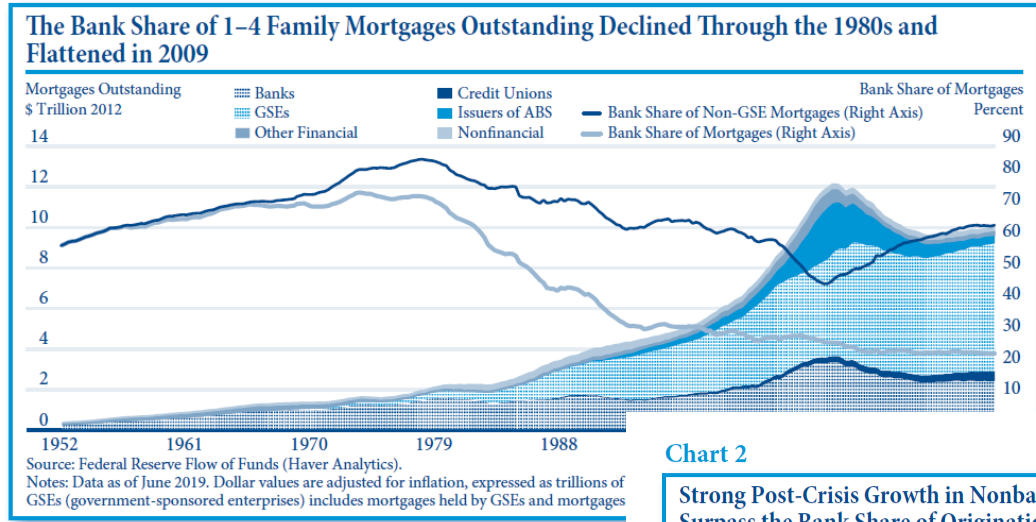
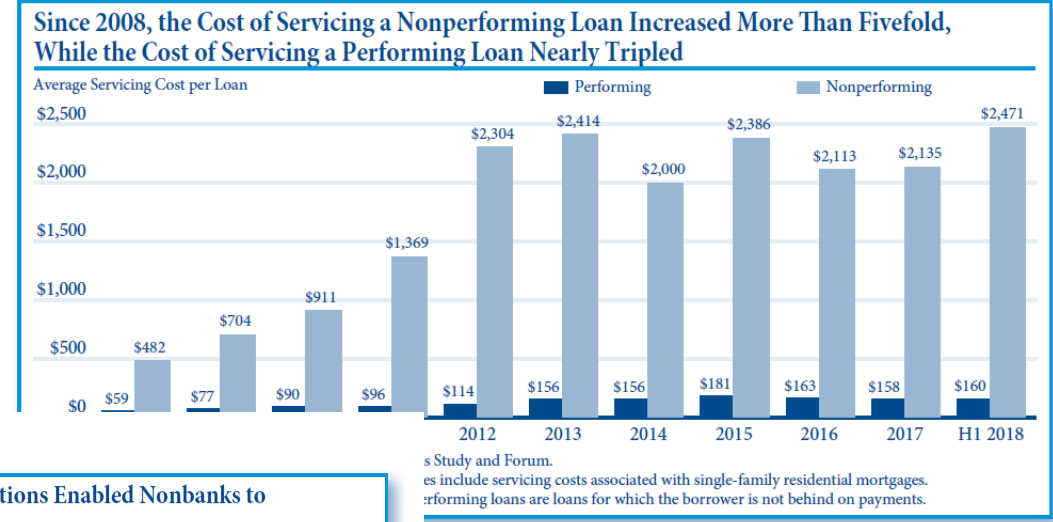
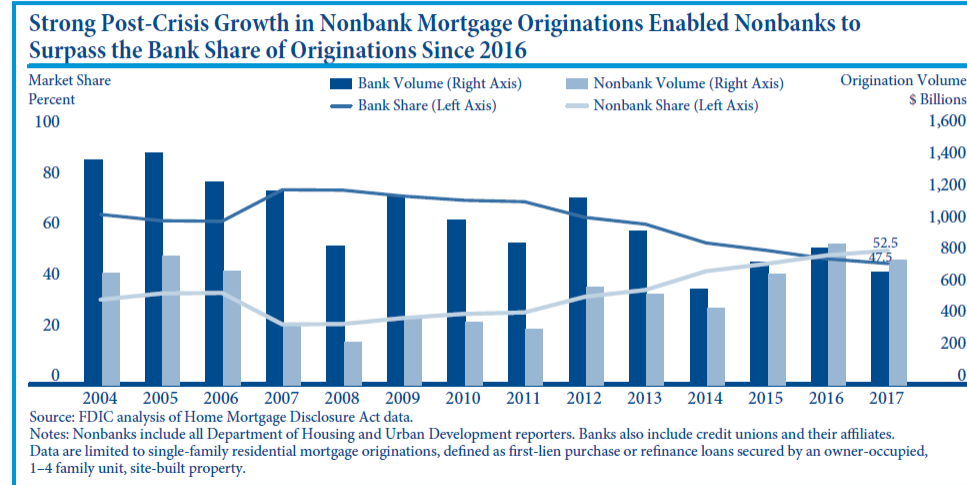


Chart 4



Graphical Sources: FDIC, Volume 13, Number 4

Chart 2



- Est. \$2.2 to \$2.5 trillion total originations in 2022
- 6 to 6.4 million units in 2022
- Price appreciation 4.5% to nearly 7% in 2022—down from over 19% in 2021

- Neobanks are exploding in numbers
- Walmart launches a FinTech
- VC's shifting their investments
- Mortgage data rising from 3K to 8K elements w/digital transformation

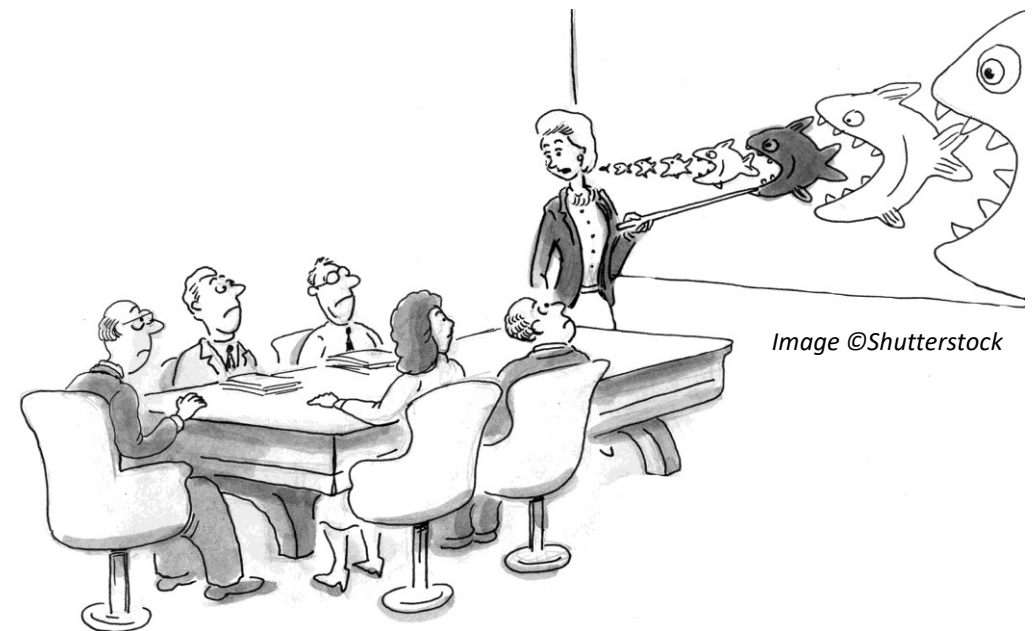
Primary Data Sources: FDIC, Fannie, MBA

Framing Our Discussion

As blockchain grows at a nearly 70% CAGR, for FSBO's and mortgage leaders, why wouldn't you adopt it? Why can't "we" do it? *Does the context of adaptation against legacy solutions require a shift from a "transactional" mindset to one of a solution mindset?* More importantly how do you standardize something that is still maturing?

- Where are we today—putting business context to technological innovation / use cases
- Laying a foundation for core competencies
- Transform the organizational mindsets and culture to align with **"Digital Demands"**

*"The mortgage market traditional players are **about the transaction**—the non-traditional competitors are about the experience and the value."*



"This is us."

Who, Why, How, and What

Today, blockchain is a “*utility*,” but it is viewed differently depending on **who** you ask, **why** they are using it, and **how** they will be implementing, and **what** is the desired outcome. *It is a means to an end—not necessarily the solution set(s) sought.*

Moreover, when framed within the business problems, standards are viewed a path for trust, availability, auditability, communication, and of course, transparency. But, standards are also traditionally viewed as an inhibitor to innovation, creativity, and disruption—**how will they adapt?**

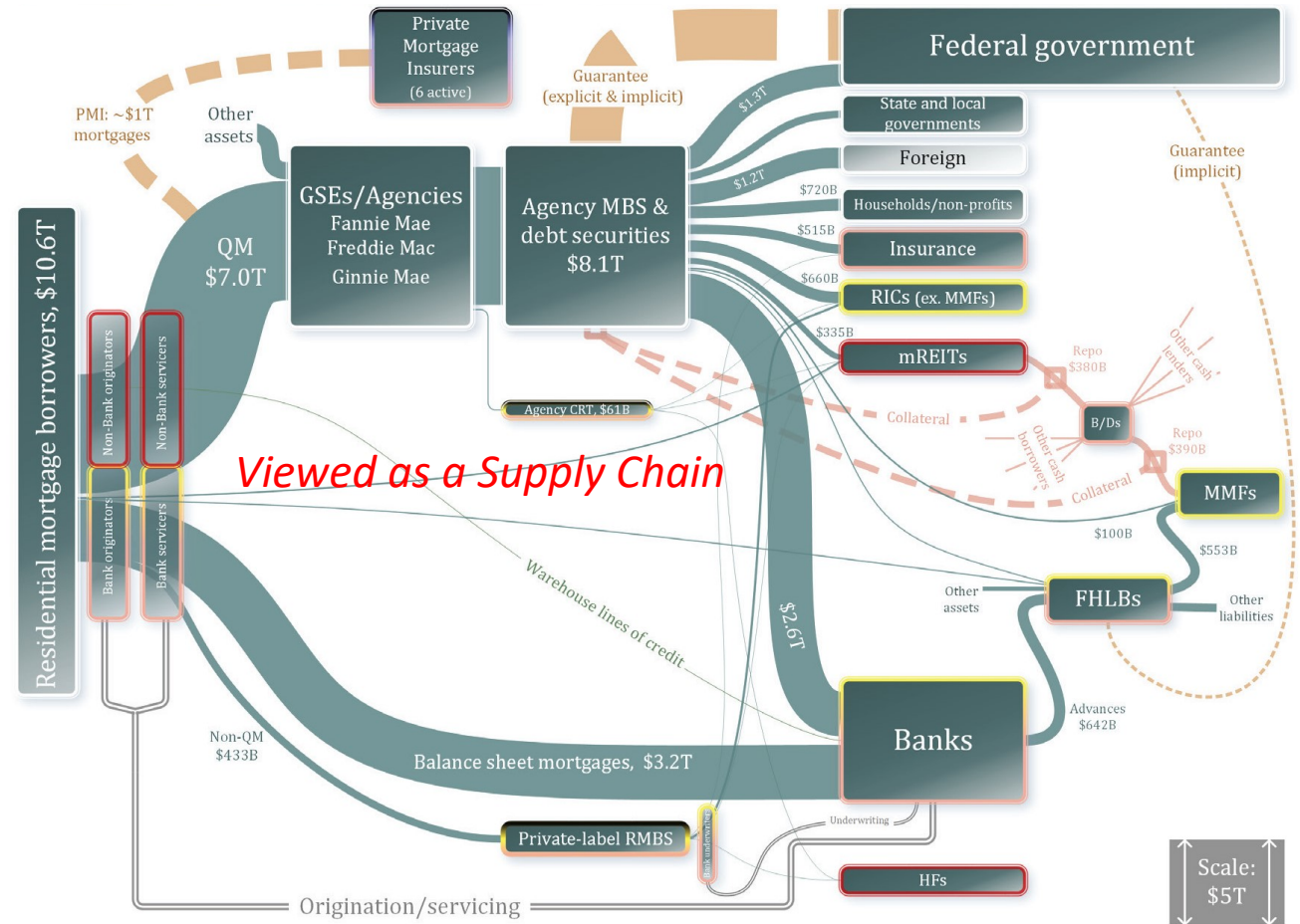
Everyone Need to Assign Value Across the FSBO Supply Chain

Mortgage / banking professionals used to be an island. Now operating within an interconnected vast ecosystem of data and non-traditional competitors their value is being questioned and disintermediated.

Source: SEC

The diagram showcases the realities and the threats to the existing flow of loans. There are two drivers for those who use this—either you believe that the flows will remain unchanged, or the market due to a change of regulation (GSE) or a change in sentiment (risk and margins) will seek alternative options.

The disruption posed by digital transformation across the mortgage supply chain **requires a shift of sentiment**. This shift will be or driven by value propositions which alter the equations and allocations. That is the start point for future actions.

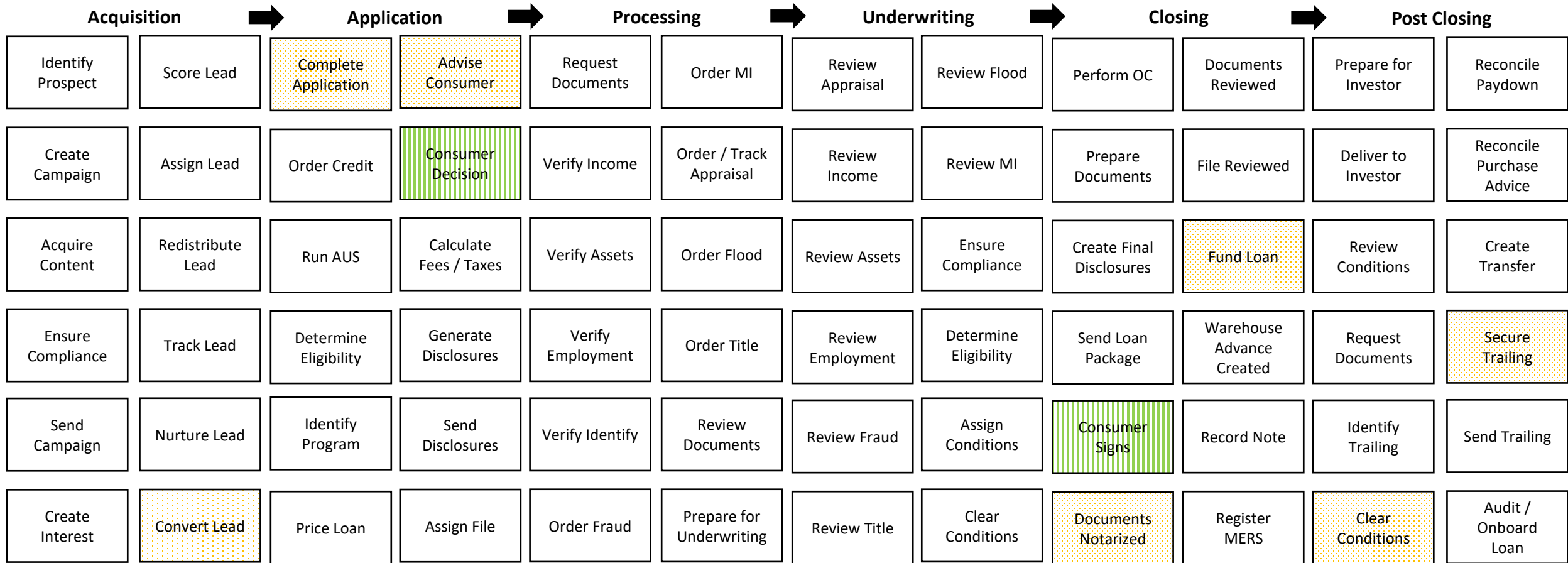


This figure shows borrowers on the left and lenders on the right, so that credit risk flows from left to right and money flows from right to left. The width of the bands represents outstanding credit as of December 31, 2019 (\$5 trillion shown at bottom right for scale).

The Supply Chain Premise—Asking the Right Questions

Discrete vendor solutions have concentrated “power” within discrete functions of the loan process—primary on automating manual inputs into capture once, use many times. However, automation is now giving way to straight through processing, robust data, and downstream impacts / partners within the mortgage supply chain. *What happens when the spoke-hub model is disintermediated?*


illustrative




Sources: Market Wise Advisors, Ellie Mae

45 to 65 days typical

 Ongoing Automation

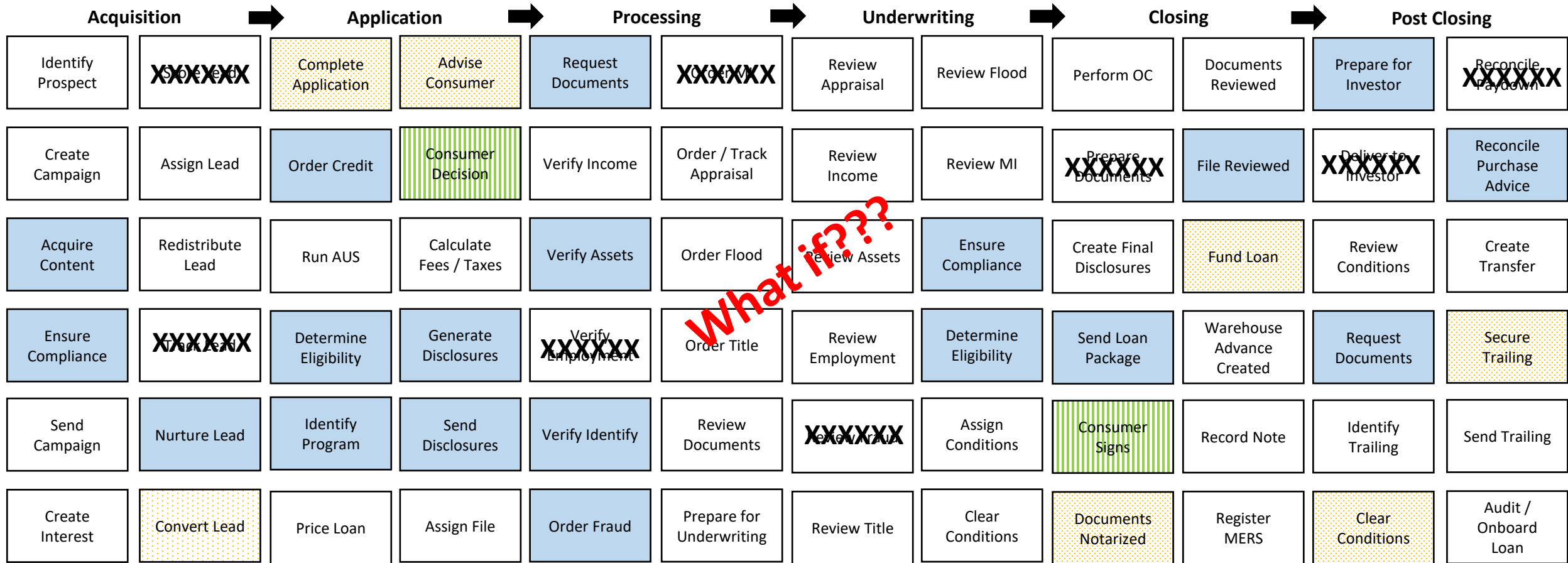
 Consumer Shifts

 P2P “Web 3.0” Control?

The Supply Chain Premise—Asking the Right Questions

Discrete vendor solutions have concentrated “power” within discrete functions of the loan process—primary on automating manual inputs into capture once, use many times. However, automation is now giving way to straight through processing, robust data, and downstream impacts / partners within the mortgage supply chain. *What happens when the spoke-hub model is disintermediated?*

illustrative



What if???

Sources: Market Wise Advisors, Ellie Mae

45 to 65 days typical

XXXXXX Ongoing Automation

Vertical Stripes Consumer Shifts

Blue Box P2P “Web 3.0” Control?

Across the Context and the Ecosystems—Needed Basic Core Competencies

The leverage of blockchain technologies requires a shift from transactional principles to solution set frameworks. Gone is the value returns of prescriptive methodologies and the axioms that propelled many banking, private equity, mortgage, and even the investor exchanges to prominence. Digitization spawned digital transformations—yet this is just the entry fee to compete moving forward.

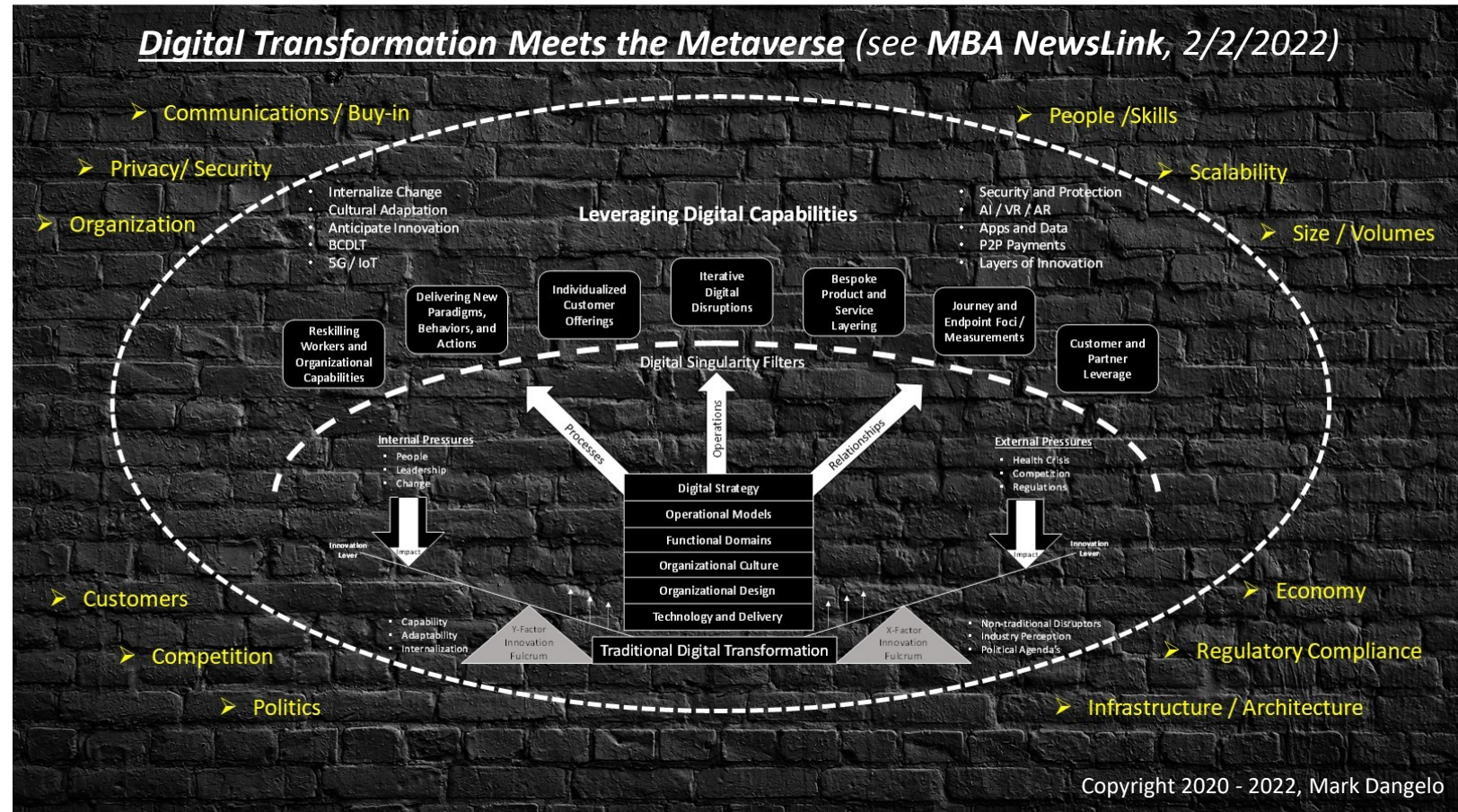
- Digital transformation and iteration approaches and mindsets—**D²I²**—define, development, implement, iterate
- Using innovational advancements as part of a **building block** (e.g., business and technical stack, compartmentalization, orchestration) that can be rapidly assembled—and disassembled
- Business to (innovation) technology alignment anchored across **data governance and curation**
- Applying of adaptable “use cases” using **digital twin** principles and solutions—including ESG
- Architecturally anticipating the “**next realities**” (i.e., Metaverse, AR, VR, AI, ML, BaaS, ... *LMNOP* ...)



Enter Stage Left—Here Comes the Layered “Metaverse”

The impact of digital transformations cannot be underestimated when it comes to future innovations and customer experiences. As expectations form the potential for new realities—i.e., the merging of physical and virtual worlds—the organizational capabilities and skills must be leveraged into adaptable solutions.

- The “next realities” must accept the engineering mindset of **crawl, walk, run**.
- Digital transformations **has sunset strategy around transactional mindsets** into container solutions that involve expandable and collapsible “stacks” to reach the blending of virtual and physical customer worlds.
- Lingering difficulties across the infrastructure and within the cultures inhibit **analytical insights**.
- **Agility, adaptability, and iteration** demands cross-industry inclusion—NIH is not a winning mindset.



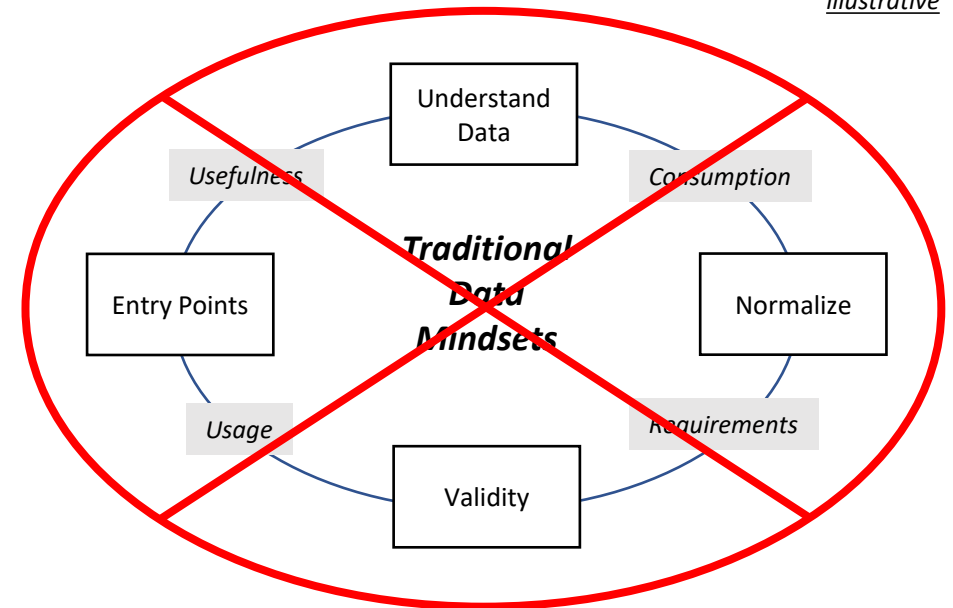
Digital transformations for FSBO's provides the catalysts for future discrete and composite innovations (e.g., Metaverse). Also recognize that 90+% of executives believe they have conquered digital transformation.

Smart Contracts Represent the “Tip-of-the-Spear”

The value of smart contracts transcend FSBO’s. Examined holistically, the idea when implemented across BC moves the transactional “how” into the broader value returns of “what, why, and who” that automates enforcement, while offering risk reductions, auditability (both internal and external), and multiple industry spanning use cases.

- The rationale for smart contracts are becoming known—but **the implications of adoption cascade up and down the financial supply chains** demanding digital artifacts and digital transformations outside the industry verticals.
 - ✓ Legal precedent and jurisdictions
 - ✓ Regulatory guidance and compliance
 - ✓ Scalability and unforeseen conditions (exceptions)
 - ✓ Proactive monitoring and analytics
- Internal audit standards (**Deloitte** and KPMG have published several briefs) are evolving with no set handling of accountability and reporting—as well as data governance and implications.
- Smart contracts could allow a mortgage note holder to aggregate tranches of loans and offer them to buyers with very detailed information about the condition of each loan within each tranche.
- **Collectively, blockchain solutions can reduce 30% of banks’ infrastructure costs.**

illustrative



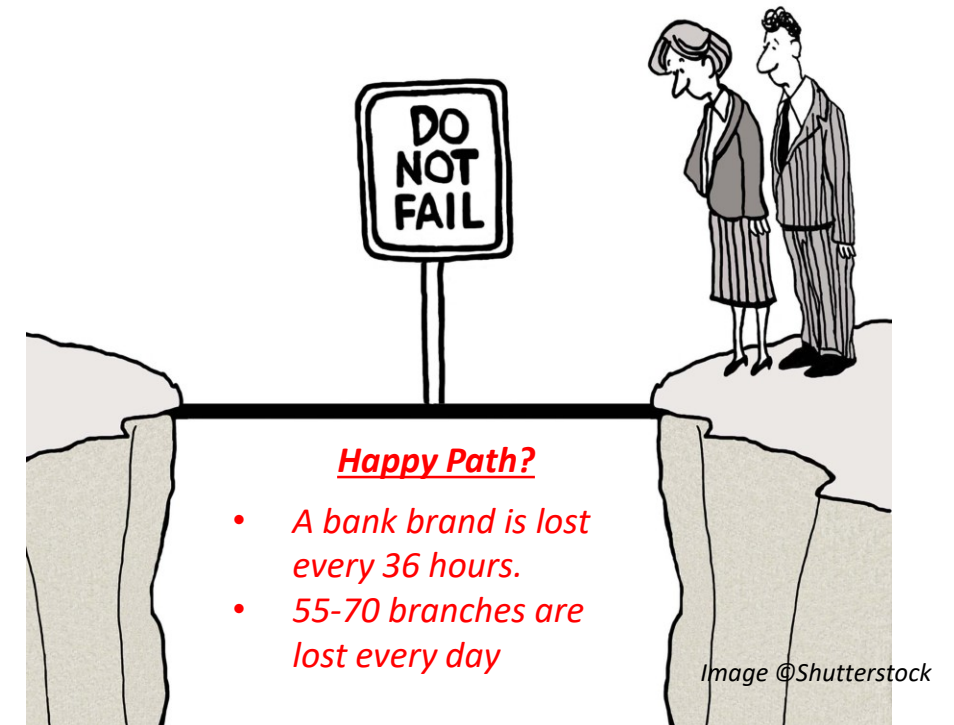
FSBO and mortgage process could be a prime candidates for smart contract implementations allowing early adopters to realize operational efficiencies and reduce costs and cycle time and increased market share.

*Think benefits when applied to **new financial instruments**—
e.g., U.S. Covered Bonds*

Framing Our Discussion

There are a lot of failures and “field of dreams” that are being built around blockchain. Vendors continue to promote their “value,” but in the end, they are expanding their proprietary solutions to ensure customer “lock-ups” regardless of the standards selected. They are focused on their value chain, but they are restricted to their own legacy operations and chasms limiting their customer efficacy.

- Where are we today—putting business context to technological innovation / use cases
- Laying a foundation for core competencies
- Transform the organizational mindsets and culture to align with **“Digital Demands”**



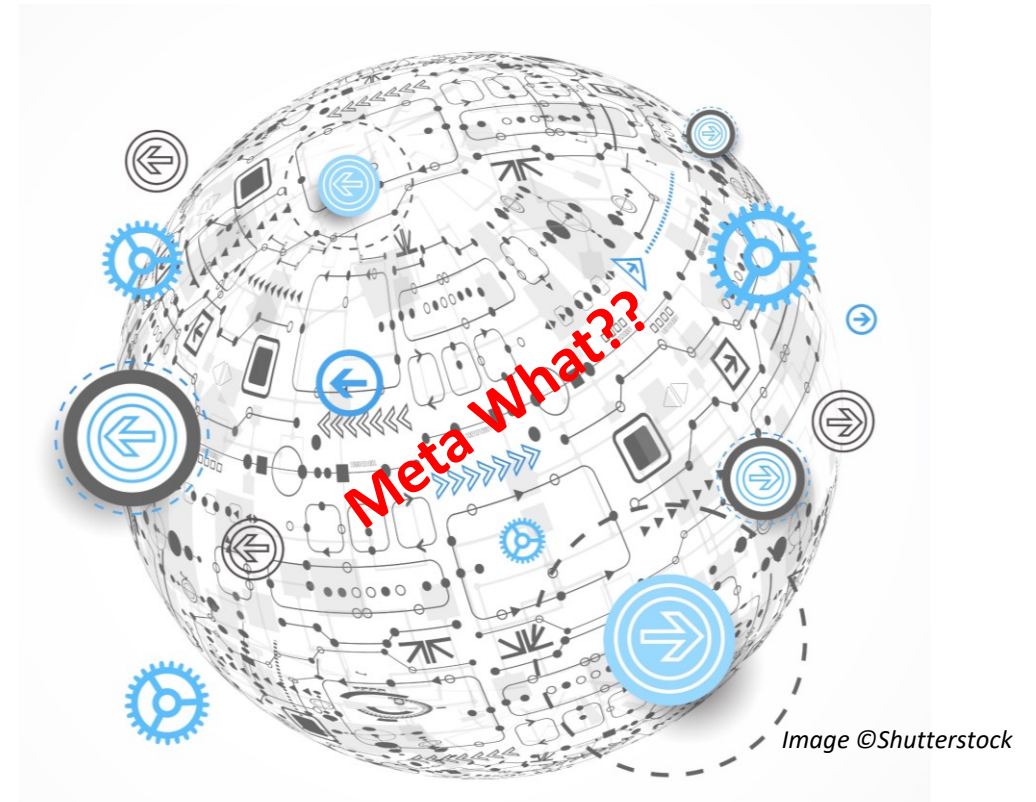
*“The **happy path** may not be able to sustain a one-size for all design due to the vast variability of operations, the risks models employed, the customer demands and behaviors, and the organizational ability to deliver.”*

*The future story of blockchains and all the associated elements—e.g., security, privacy, anonymity, digital wallets, ledgers, hashing, immutability, transparency—**has permanently shifted from its components and into layered business solutions and compartmentalized innovations.***

“WE” Operate in Data Economies and Ecosystems—No Longer Islands

*When we talk about Hyperledger, blockchains, hashing, tokenization, digital wallets and more, we showcase the movement of assets from traditional to digital. New financial instruments, new securitization opportunities, and evolving regulatory compliance highlight the changing impacts on our business models, our offerings, and most importantly, **our ability to adapt and delivery capabilities.***

- Within our cultures and in response to real and perceived competitive threats, FSBO leaders will chase the Metaverse—**who** will establish the roadmaps for D²I² when it comes to moving from traditional to blockchain solutions?
- **What** internal rewards and cultural risk-taking transactional mindsets must be changed with blockchain and its adoption?
- With data in the possession of non-traditional competitors, and with third-party aggregators, the stakeholder and cross-platform interconnections pose significant barriers to adoption—**how** will blockchain and standards mitigate barriers?
- **Why** should organizational leadership trust that your blockchain implementation methods and solutions provide the path forward—beyond robust technologies?



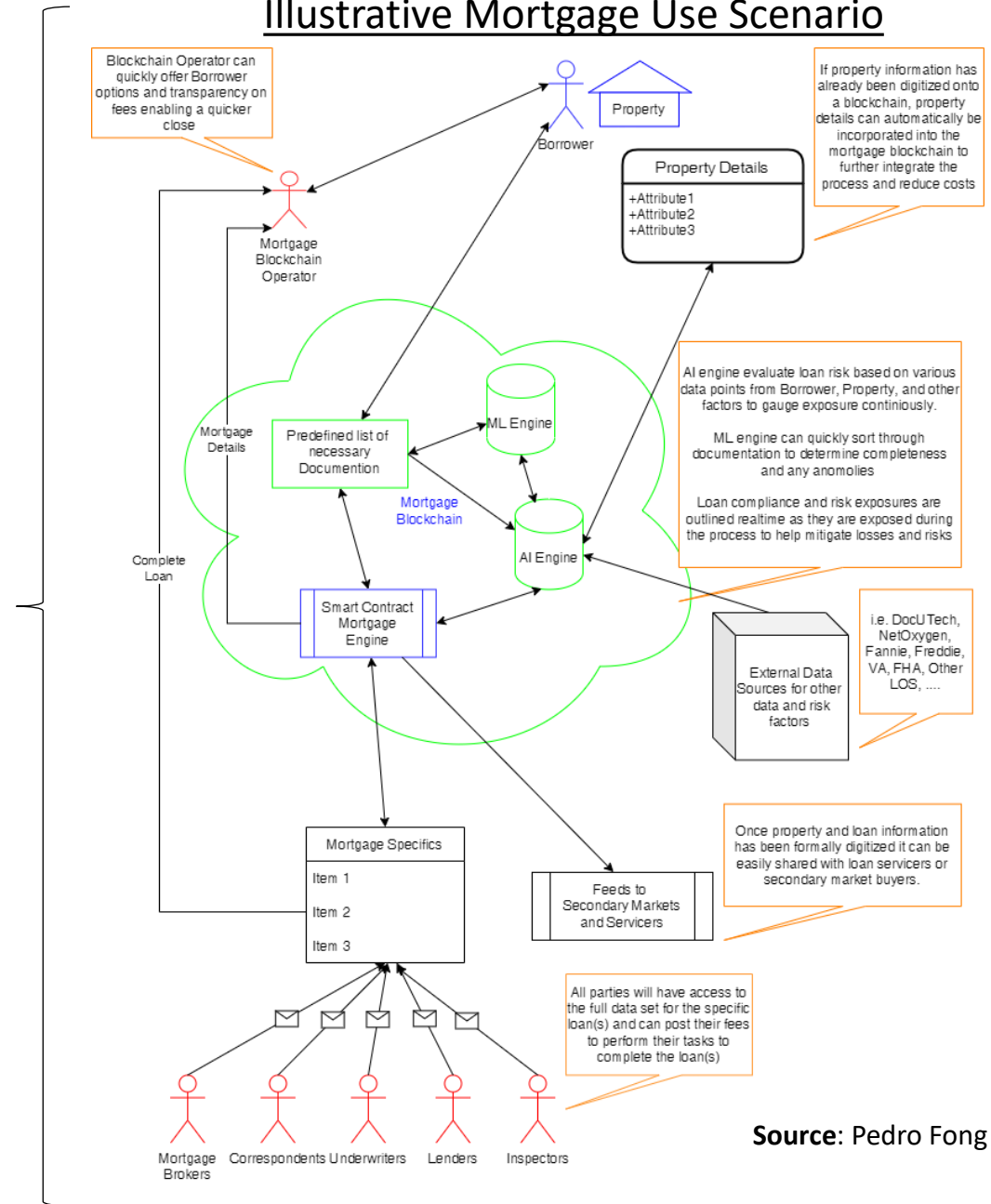
*FSBO's and mortgage firms **now must compete across barriers that once held competitors at the castle walls.** Now, data is the electric, the glue, and the competitive differentiator—if we can only leverage it.*

Blockchain=Disintermediation Catalyst?

Financial processes grow more complex and risk laden with the expansion of data across systems and across industries.

- The digital data volume is growing—elements, systems, cloud configurations, FinTech--**what new use cases will emerge** that transform the principles of exchange and recording?
- Consumers are **seeking to limit access** to personal information as well as gain insights into ML / AI decision (biases) impacting their credit, the products they are offered, and a “ledger” of who has requested data sources.
- For firms, blockchain solutions offers a streamlined commodity with predefined or customized risk and operational parameters, which **leverage different aspects of AI and ML engines** to perform the operational decisions as well as higher level risk scenarios.
- **Blockchain provides the ability to restructure the existing mortgage process** offering the opportunity to disintermediate many of the current middle-men and creating the opportunity to reduce the multiple hand-offs within the current process which drive up costs, increase complexity, and add delays to the process.

Illustrative Mortgage Use Scenario



Source: Pedro Fong

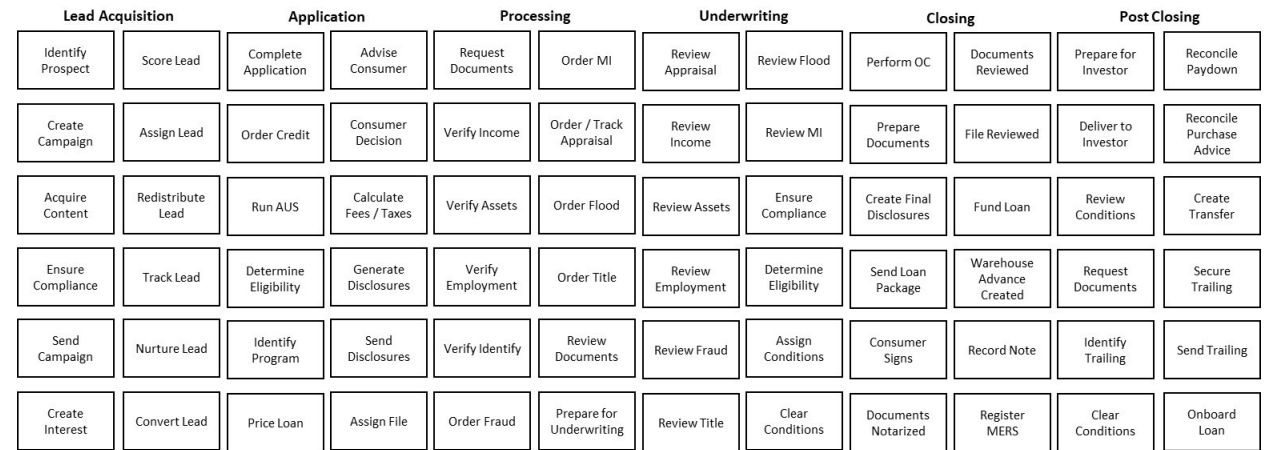
Data Complexity, Security, and Process Digital Demands → Blockchain!?

*In the end, ask yourself, how much data can be used effectively, is it ethically sourced, and does it go against recent laws established to protect the consumer and their privacy? What are the risks associated with gathering third-party aggregator data? Who is monitoring the **constant changes in the six “V’s” of data** in addition to the granular value and brand challenges?*

- What capabilities does the organization have as **core competencies** when it comes to:

- ✓ Technology skills and people
- ✓ Blockchain
- ✓ IT systems
- ✓ Development / DevOps
- ✓ Architecture
- ✓ Processes
- ✓ Partners
- ✓ Digital transformations
- ✓ Innovations and patents
- ✓ Customer demographics
- ✓ Regulatory and compliance
- ✓ et al

- How does the inclusion of blockchain improve value or market distinction when overlaid?
- **Does the organization possess the discipline, rigor, and maturity needed to continually adapt using blockchain solutions?**



Sources: Market Wise Advisors, Ellie Mae

less than 15 days?

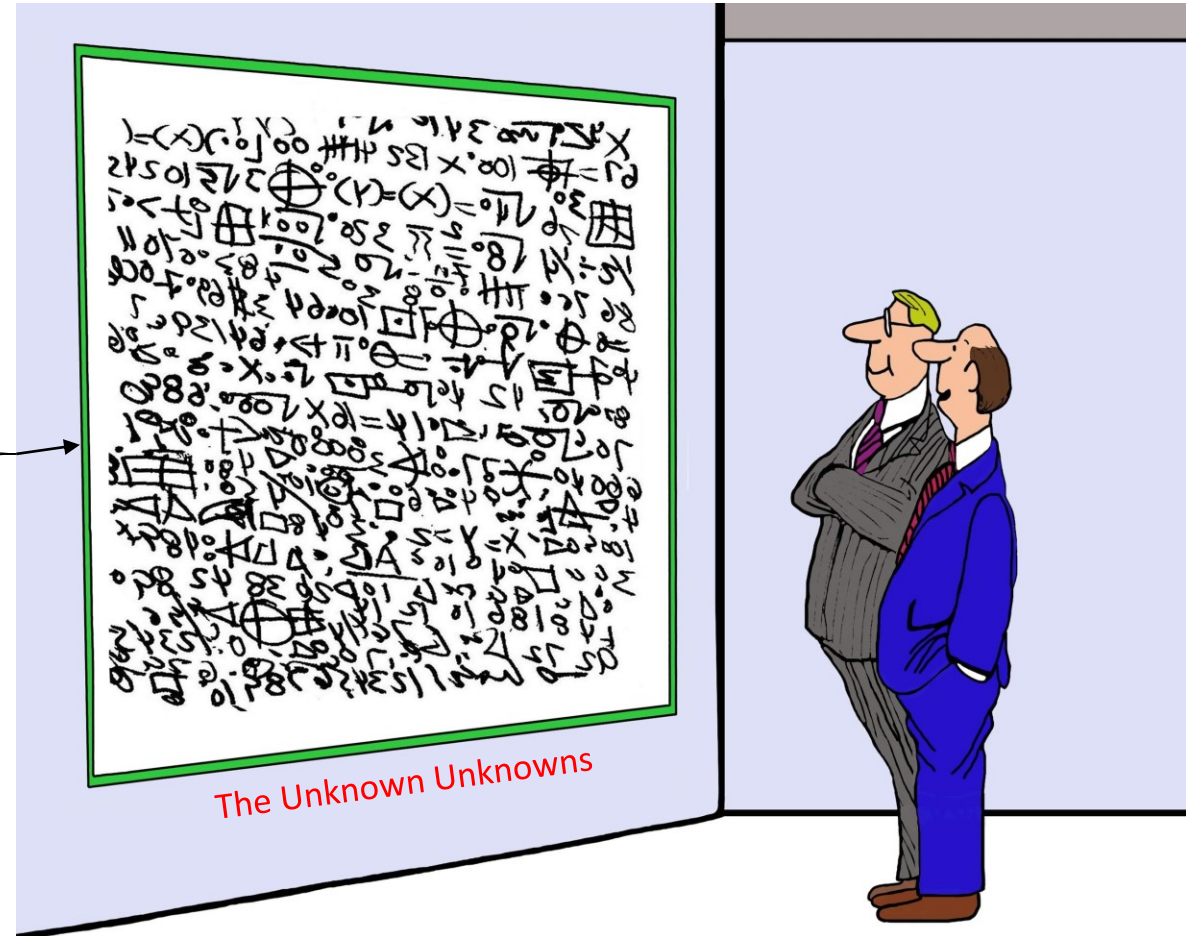


In the End ...

*Innovation and technological sciences will always prevail. However, the innovative applicability resides in usage and the value it brings to evolving business **Digital Demands and Innovative Relevance.***

- Those leaders across FSBO's and mortgage firms who embrace blockchain and its interoperability standards, will **create separation** between their competitor's commodity offerings.
- The “**business of blockchain,**” as implemented within industry and enterprise digital demands, will foster adaption of innovations while also delivering cultural iterations needed for process transformations.
- **Unstuffing the Keyhole** for FSBO and mortgage firms requires a shift of focus from transaction to solution sets thereby reducing the confusion of rapid-innovations and unrealistic expectations.
- Blockchain implementations will **unlikely be one-size-fits-all creating layers of opportunities** as well as “unknowns unknowns” as technologies scale.

Next Week in **MBA NewsLink**, “*The Rapid Phase Shift of Organizational Competencies and Operational Mindsets*”



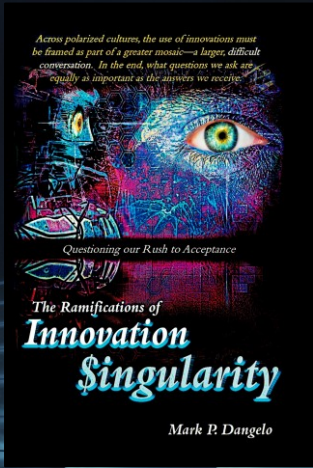
“When you put it like that, it makes complete sense.”

Image ©Shutterstock

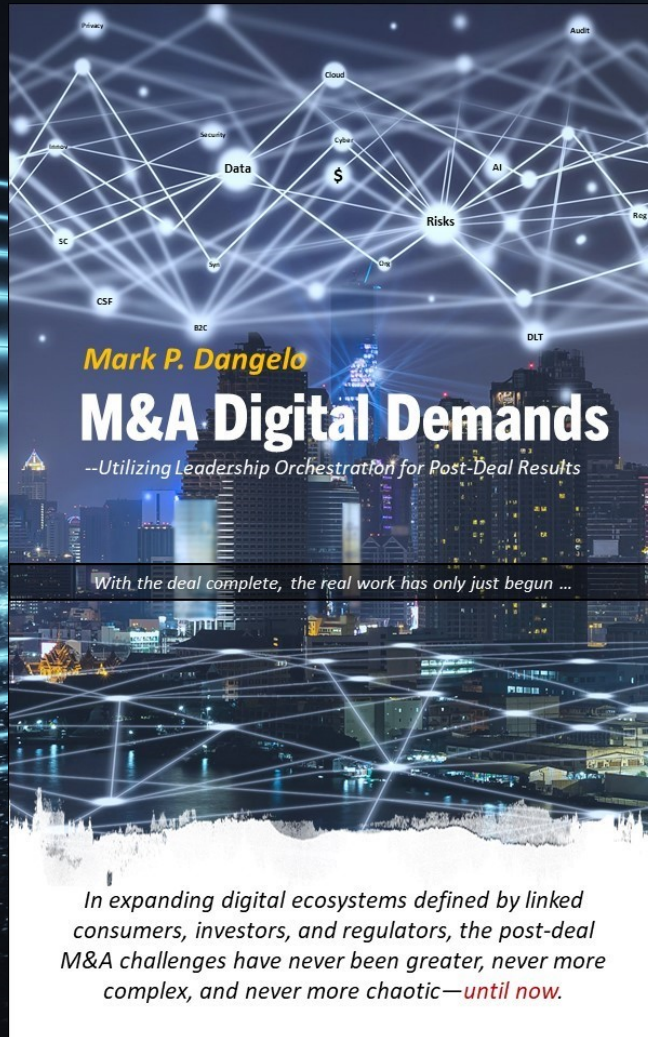
Questions / Thank You ...

Contact: mark@mpdangelo.com, 440.725.9402

ISBN: 978-0-9989235-2-9



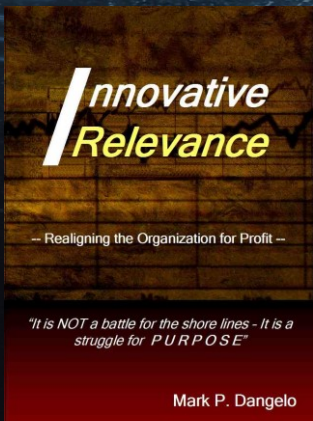
ISBN: 978-0-9989235-1-2



ISBN: 978-0-9989235-9-8

Available at Barnes & Noble

ISBN: 0595670814



ISBN: 978059567376

About Mark P. Dangelo

As an agile leader and innovator, Mark started his career as a computer scientist and consultant. He has worked globally advising hundreds of companies across the Fortune 50 to the Russell 3000 to privately owned enterprises. His views on innovation are a direct result of his decades of practical experiences.

Mark has worked domestically and internationally on M&A initiatives, operational efficiencies, organizational restructurings, emerging innovations, product and organizational launches, and technology refreshes. In addition, he is a prior c-level executive and program manager leading diverse teams and enterprises exceeding 5,000 personnel.

Mark has worked in industries including financial services, mortgage, telecommunications, healthcare, bond and equity exchanges, manufacturing, distribution, and high technology. He has been also a principal consultant for A.T. Kearney, CSC, Stanford Research Institute, and a senior manager for Ernst & Young. His educational foundations include a Bachelor of Science in Computer Science and a Master in Business.

He is a published author of five books, hundreds of business and innovation articles, and a columnist for a national financial association, and a prior author on green building of equestrian facilities. His passion for writing centers on steadfast principle—"Make people and enterprises think." Mark is also an adjunct college professor and operates a sustainable horse and crop farm.

Legal Disclosures and Information:

- Stock images copyrighted Shutterstock.
- Copyrighted 2022 MPD Organizations, LLC, All Rights Reserved.
- The statements made herein, along with the book promoted, do not signify advice, statements of fact, legal recourse, or a lack of common sense.
- Author cannot be held liable for any errors, omissions, or inaccuracies.
- This video is for entertainment value only.
- Video produced by Mark P. Dangelo with Microsoft products.
- Book covers edited by Elizabeth D. Dangelo Photography.
- All intents and actions have been designed to protect original copyright holders.
- And finally, with a bit more formality, "although the author has made every effort to ensure that the information in this book was correct at press time, the author does not assume and hereby disclaim any liability to any party for any loss, damage, or disruption caused by errors or omissions, whether such errors or omissions result from negligence, accident, or any other cause."