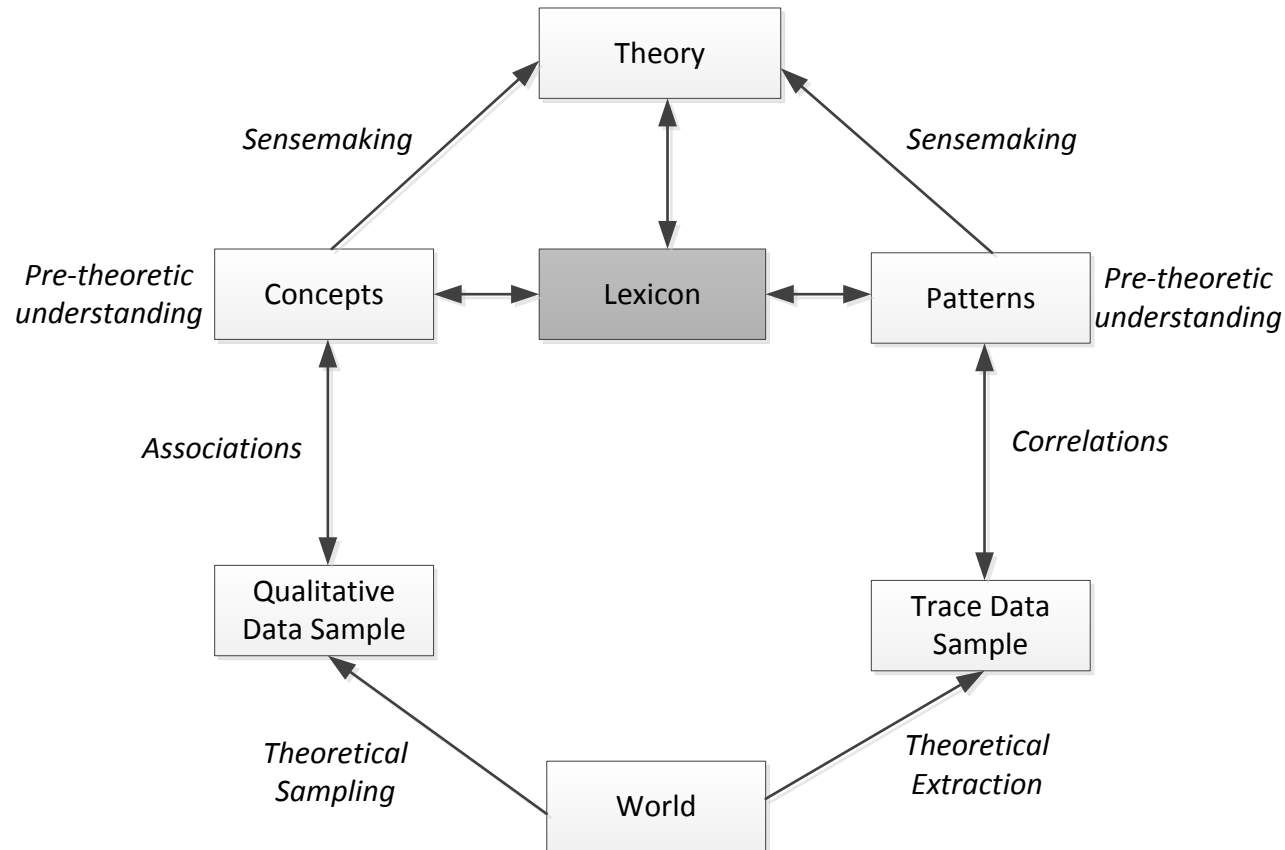




The Logic of Digital Innovation

Nick Berente
University of Georgia





Mixed Computational & Qualitative Methods

Digital Innovation

vs.

IT Innovation

Sanja Tumbas





Digital Innovation

vs.

IT Innovation

Digital Innovation Definition

Digital technologies...

are combinations of information, computing, communication, and connectivity technologies

(Bharadwaj, El Sawy, Pavlou, & Venkatraman, 2013)

Innovation ...

is an idea, practice or object perceived as new

(Rogers 1995)

IT

Innovation Definition

Information technologies...

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Innovation ...

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IT Innovation Use

Diffusion, adoption, adaptation, and implementation of IT

- organizational systems, business process improvement, individual and group use, infrastructures, business intelligence

IT development

- methods, languages, database, risk

IT outcomes

- productivity, pricing, marketplaces

(reinterpreted: Sidorova et al 2008)

Digital Innovation Use

Product

- digitally-enabled products, digital components & control systems

Business model

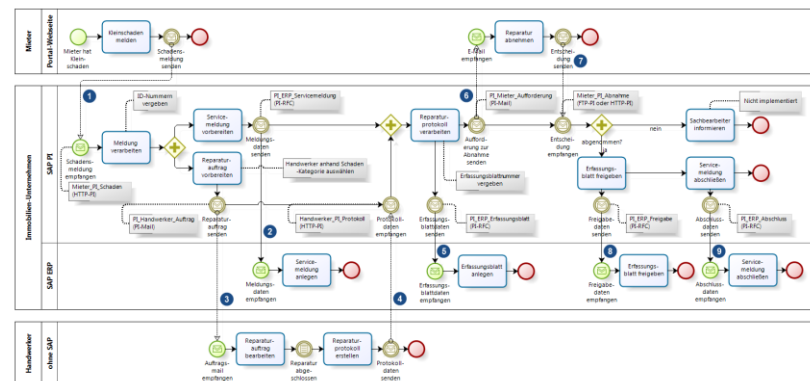
- open innovation; cocreation; platform ecosystems

Data

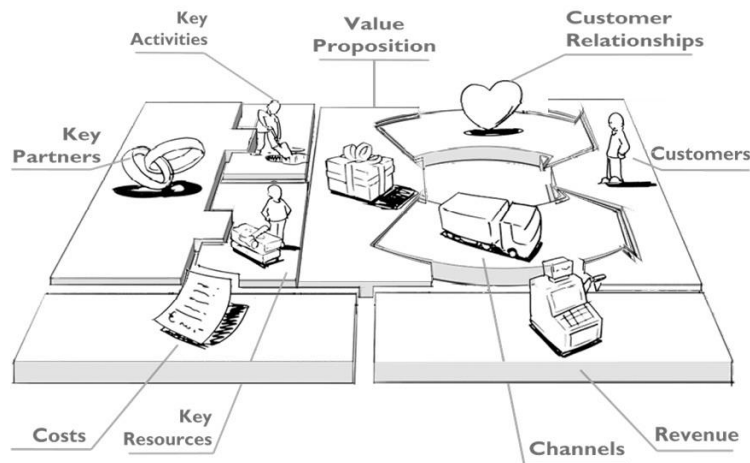
- analytics, big data, customer / personalization

(Yoo et al 2010; Yoo 2010; Tiwana et al 2010; Lee & Berente 2012; Nambisan 2013; Fichman et al 2014)

IT Innovation = What IT Departments Do



Digital Innovation = What Non-IT People Do



“Digital Innovation”

Fashionable buzzword or something
substantive?



EVOSHIELD



Initial Observations

- Business model changes
- IT Logic vs. Digital Innovation
- Marketing Logic vs. Digital Innovation

Initial Observations

- **Business model changes**
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Questioning Transaction Business Model



Jon Coleman
Sustainability
and Advanced
Technology in
Fleet Mgt

“if it’s weird,
wild, and
wonderful...”

“The business model of the past involved selling vehicles to owner/operators and owner/operators are the same business model that is being scrambled ... the existing model ceasing to function as the middle class emerges around the world. The middle class is coming on-line in India and China and this is just the tip of the iceberg on economic gridlock if they were to each own and operate their own vehicle.... People are finding ways to disrupt the ‘own a car’ model... there are a variety of such models such as emergent ride and vehicle sharing efforts and planned city-wide efforts to relieve gridlock...”

“Not largely understood in auto industry... we’ve been doing this for so long... keeping assembly plants going keeps a big portion of the company’s attention...”



Looking More Like a Technology Company



Alan Fisk
Infrastructure
Architecture

- “Engines and chassis all are so good now...”
- “Most of what is on a vehicle can be bought from Tier 1 suppliers... particularly the electric car route.”

“We are in the process of making a transition from a manufacturing company to a technology company... the difference between us and Apple is getting to be less and less.”



Looking More Like a Technology Company



Venkatesh Prasad

Ford's "What's Next Guy"

Senior technical leader, Vehicle Design and Infotronics, Ford Research and Innovation

"We are at a very exciting crossroads... Couple of moves... continuing our trajectory of making cars in as profitable a way as we can and differentiate our vehicles with a reduced set of platforms... increase margins with respect to costs...."

"In the mid and long term there are disruptors in the manner in which we change in a game changing way ... what is disruptive ... (for example) autonomous vehicles at different levels of capability"



Looking More Like a Technology Company



“We see changes that are forcing us to rethink our existing transaction-based business model... what are some services around mobility... New forms of intermediation and disintermediation are happening... and this points to digital.”

Venkatesh Prasad

Ford’s “What’s Next Guy”

Senior technical leader, Vehicle Design and Infotronics, Ford Research and Innovation

make data-driven, persuasive case for change

- 25 experiments
- Innovation 40% digital 10 years ago; 80% digital now



Looking More Like a Technology Company



Matthew Gymer
Director of Innovation

“I could do 80% of my primary care outside of a hospital... I don’t need to go to my doctor.... Big hospital systems like Novant focus on new customer acquisition... but they touch us for one thing and then move on....

The only way I can get the needle to move [with the CFO] is when I get a small amount of money to prove out a return on investment on a small scale pilot project... Then extrapolate these results over other opportunities.”

Healthcare & Banking



- Multi-source record of information for customer
- Intimate customer awareness – predictive analysis
- Security & privacy
- Government regulation
- Streamline operations with IT

Blurring Industry Barriers



Sandeep Gupta
Senior Vice President

Century-old credit monitoring service for the financial industry.

Now providing information for:

- Healthcare
- IRS / taxes
- Dating sites
- Etc.



THE WALL STREET JOURNAL.

Marketplace' Section Renamed 'Business & Tech.'

New name for WSJ's B-section reflects how technology affects all businesses

Every business is a technology business. Whether it's taxi cabs or taco delivery, today's enterprises are urgently figuring out ways to manage the growth of information technology and to turn its disruptive potential to their advantage.

Algorithms direct our doctors and instruct our farmers. They will increasingly guide nearly every function in the modern enterprise. This is why it's likely that your company's next CEO is currently a CIO, and why valuations for Silicon Valley startups march ever higher.

To reflect these changes, we are today making our own change, retiring the 27-year-old name Marketplace for a new moniker, Business & Tech.

The section will continue to be the place to go for the most comprehensive and best-informed coverage of the business world: from marketing to manufacturing to services and every other non-financial industry sector around the globe.

But from today, you will also see a greater emphasis on artificial intelligence, robotics, and other emerging technology, and the opportunities created by this new era. Welcome to WSJD, our digital hub for tech coverage.

Above all, our goal is to serve you, and make The Wall Street Journal a more useful and understandable part of your work and your world.



Initial Observations

- Business model changes
 - Decoupling field and industry
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Outside Perception of IT



Matthew Gymer
Director of Innovation

[There's a perception of] "... putting in electronic systems that are supposed to streamline everything and provide integrated data, but often they seem to cause more problems because of implementation problems.... Old line industry mindset of just putting in basic electronic systems... ”

“The easiest decision is to look at a guy with 30 years of IT experience and say ‘That’s my CIO!’ ... A CIO is not going to give you money for R&D”

IT Function Less Disruptive

CIO responsible for implementation of technologies – “supportive priorities will always win out and disruptive ones will almost always seem less likely to be close to customer needs or return a short term yield”



CHIEF DIGITAL
OFFICER CDO
HANDBOOK
DR MARK R BAKER



IT Function as “Delivery Arm”

“CMOs expect much quicker turnaround and higher quality from IT, with a greater degree of flexibility in responding to market requirements. CMOs view the CIO organization as an execution and delivery arm at a time when they should consider IT as a strategic partner and involve CIOs when planning new marketing investments.”

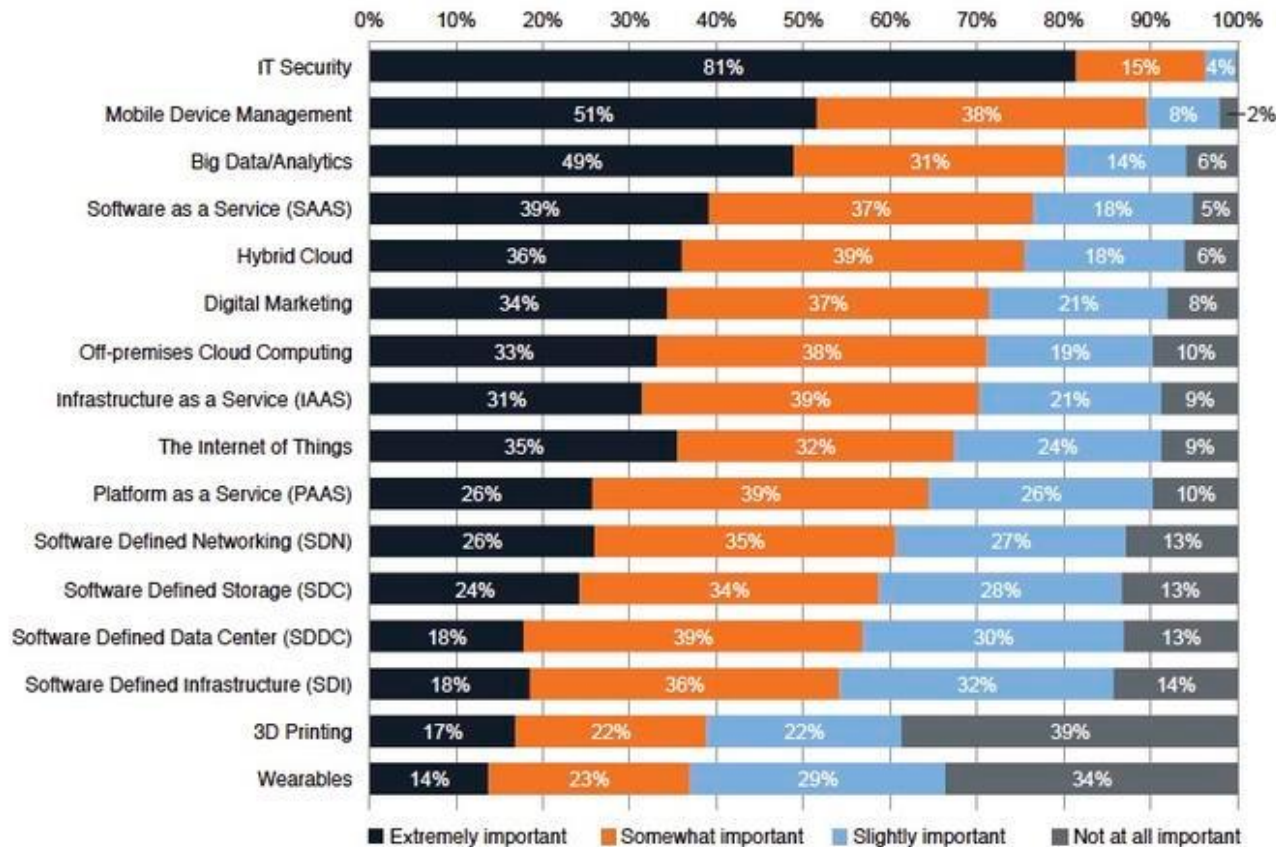
38 percent of CMOs saying that IT deliberately keeps them out of the loop

35 percent that marketing concerns aren't a high enough priority.

<http://www.accenture.com/us-en/Pages/insight-cmo-cio-customer-experience.aspx>



IMPORTANCE OF EMERGING TECHNOLOGIES TO IT DEPARTMENTS OVER THE NEXT THREE YEARS



Number of respondents, n=418

<http://www.zdnet.com/article/research-82-percent-of-it-leaders-consider-security-a-top-priority/>



Blurring Industry Barriers



Sandeep Gupta
Senior Vice President

“The security framework in Hadoop which involves dumping your data and give everyone access is not adequate. Give everyone write access? Role based access control doesn’t work because we don’t organize projects that way....

“We find the importance of purpose of analysis is important for access...(they are mapping regulations to data...). Our skill set needs to be at the intersection of regulation and data access as well as regulation of business processes... with new innovative elements we don’t know what we will do in advance necessarily... we need to have an audit trail after the fact.”

Intermediated Customer Relationships



Alan Fisk
Infrastructure
Architecture

- Product development engineers some software development in embedded systems associated with the powertrain (including emission control).
- All other embedded systems such as HVAC, chassis, steering, antilock brakes, etc., were all provided by suppliers. There is a dual bus structure on vehicles that are industry-standard.



Separation of Product Development & IT



“There was a whole generation that wanted to bring their iPod into the vehicle and connect with the vehicle... Microsoft Sync was born.”

“Historically Product Development’s IT group helped with vehicle BOMs, PLM systems, and basically was an IT group with Ford Engineering and Product Development as a customer.... Product Development IT was doing limited stuff with the Microsoft Sync tool.”



Bringing IT in with Product Development



Alan Fisk
Infrastructure
Architecture

The Product Development folks said: “we don’t have the vision, experience, and knowledge with the Internet, Internet services, to figure out eCommerce... portals... we really need your [PD IT group’s] expertise to understand this... We went from being a software supplier to having a seat at the table with product development.”

- PD needed IT’s capabilities with Internet services and real-time OS...
- At Ford PD there is “an increasing number of people with the IT label on our heads”

The IT group is “changing our approach” to software development:
“If it took five years for us to develop a major corporate system... “how do you work in a world where every six months you need a new product and it has to be customer ready?”



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 - IT logic is conservative
 - IT signification
- Marketing Logic vs. Digital Innovation

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Intermediated Customer Relationships



“Our customers are the dealers. We don’t sell vehicles to people, we sell them to dealers. Except when there are problems, we didn’t have a strong relationship directly with the customer. There was an understanding that the relationship was between the dealer and the customer.... “The whole view of the customer was at the market research level... a shotgun approach.”



“Most companies don’t manage their own fleet... fleet management companies handle all of the behind the scenes companies... been doing this almost as long as Ford has been in business... Fleet companies see digital as an opportunity... predictive and preventative maintenance...”



Intermediated Customer Relationships



(History of contact through use with customers) “We hired a Chief Data Officer, it is our data that makes us more like Google than Ford Motor Company... The datacenter has to think about managing petabytes... it is an order of magnitude greater than we are used to.”



“A lot of people think we’re leaving business on the table because of the data analytics revolution. We’re not using the data... The data belongs to the customer... where you go, and how you drive is yours, it’s not ours to exploit...”



Customer Relationship Intermediated



- Bank: intermediated through mortgage providers, car dealers, college for student loans
- Hospital: intermediated through insurance companies
- Consumer: intermediated through large retailers

Disintermediating Customer Relationship



Matthew Gymer
Director of Innovation

“A CEO wants ... to see a CMO that came through brand or product.”

“Firms look for top-line growth (new customers) rather than organic growth (share of wallet)...

“The next step is individualized digital... The sharpest edge in the evolution of healthcare... the health systems that fight off that intermediary and enable conversations about quality of care.... Those that don't will commoditize health care services...”

Disintermediating Customer Relationship



Adam Wexler
Founder InsightPool



ticketmaster

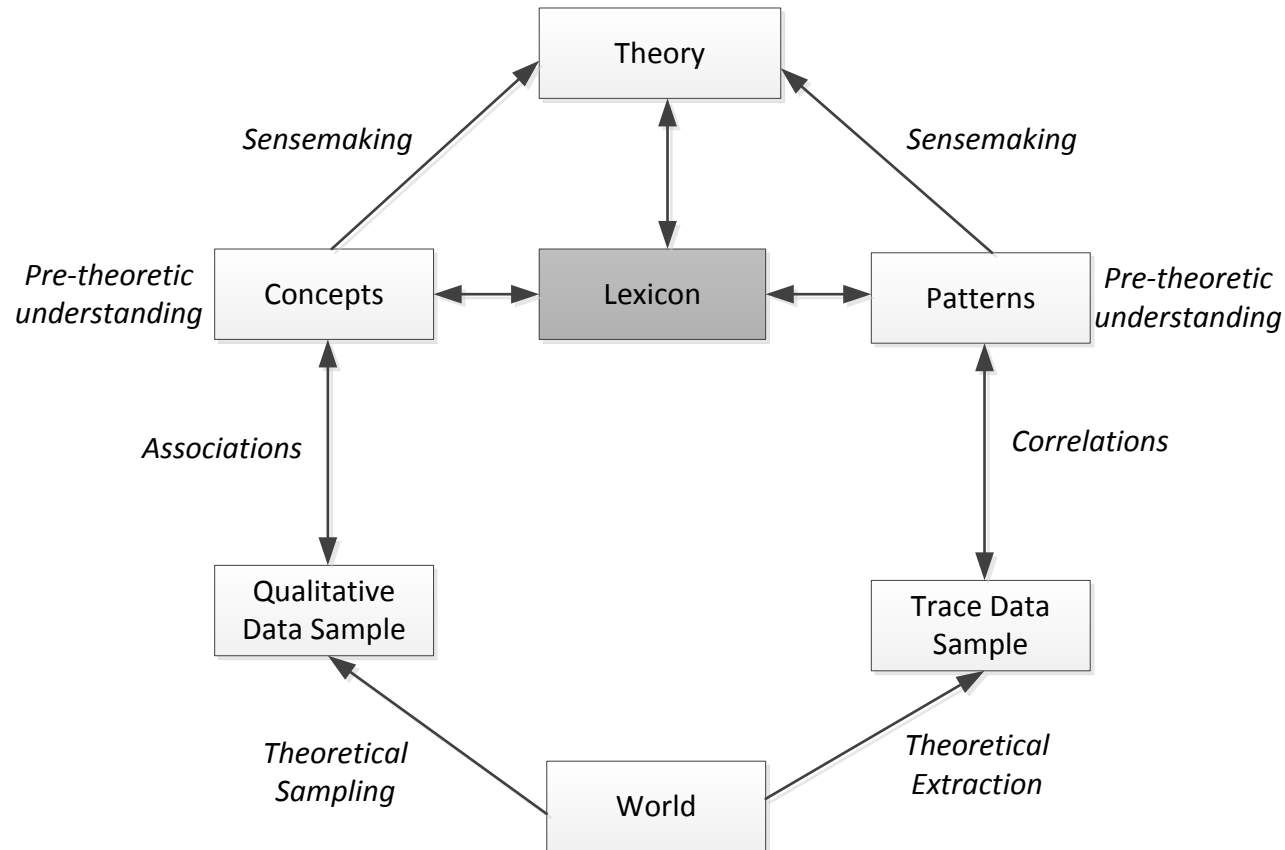


Initial Observations

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 - IT logic is conservative
- Marketing Logic vs. Digital Innovation
 - Disintermediation
 - Digital technologies

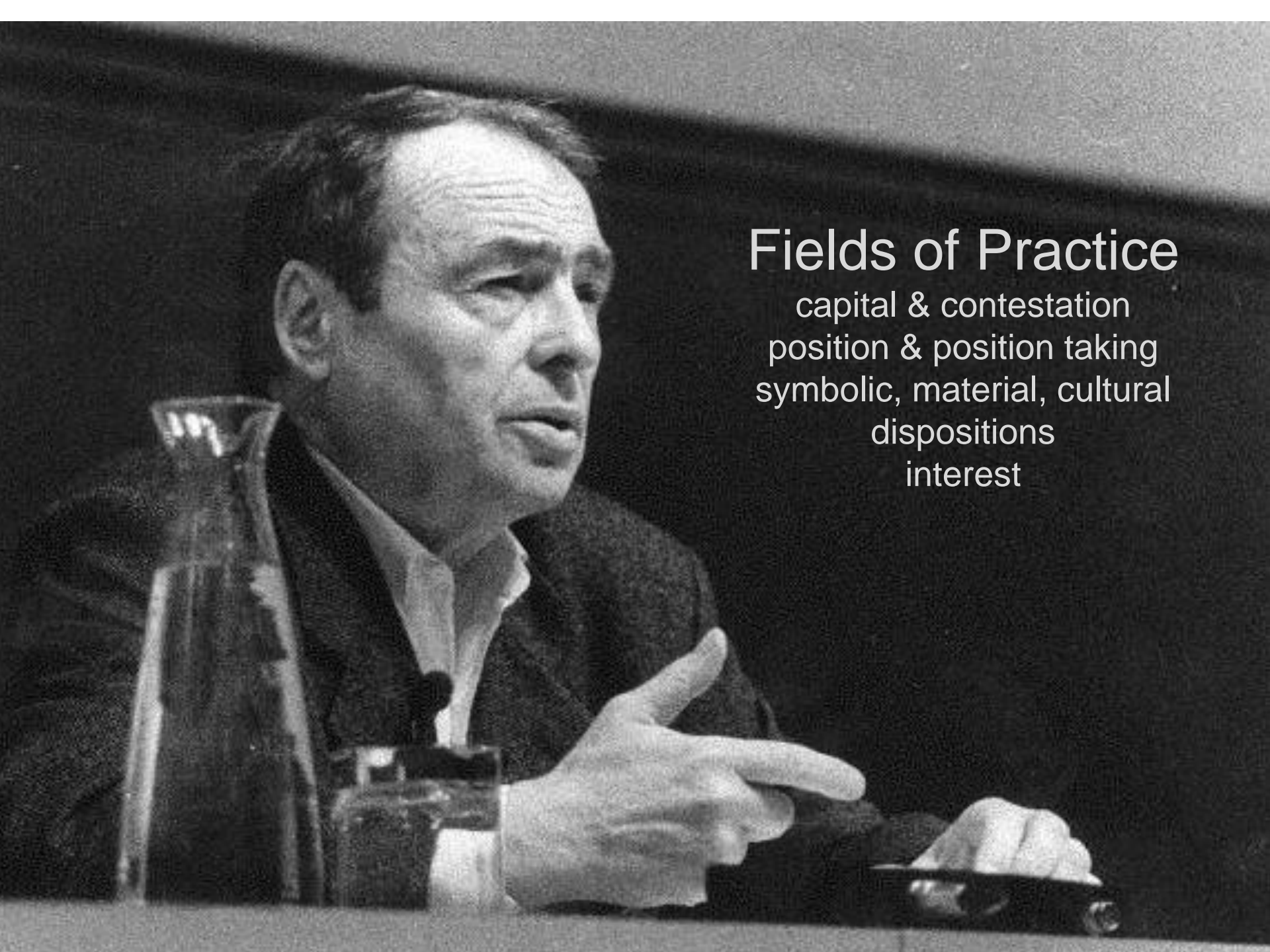
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Mixed Computational & Qualitative Methods





Fields of Practice

capital & contestation
position & position taking
symbolic, material, cultural
dispositions
interest



Organizational Fields

Sector & Industry
Isomorphism

Institutional Logics
Field Pluralism



Infrastructure		
Human Resources		
Technology		

Procurement		
Inbound Logistics	Operations	Outbound Logistics

SUPPORT ACTIVITIES

Information Technology				
Human Resources				
Research and Development				
Regulatory Compliance				
Inbound: Asset/Liability Mgmt. Policy/Procedures Loan Origination Account Origination	Production: Underwriting New Accounts	Outbound: Funding Document Prep Fulfillment	Sales/Marketing: Collateral Material Communication	Servicing: Payment Processing Transaction Process Technical Support

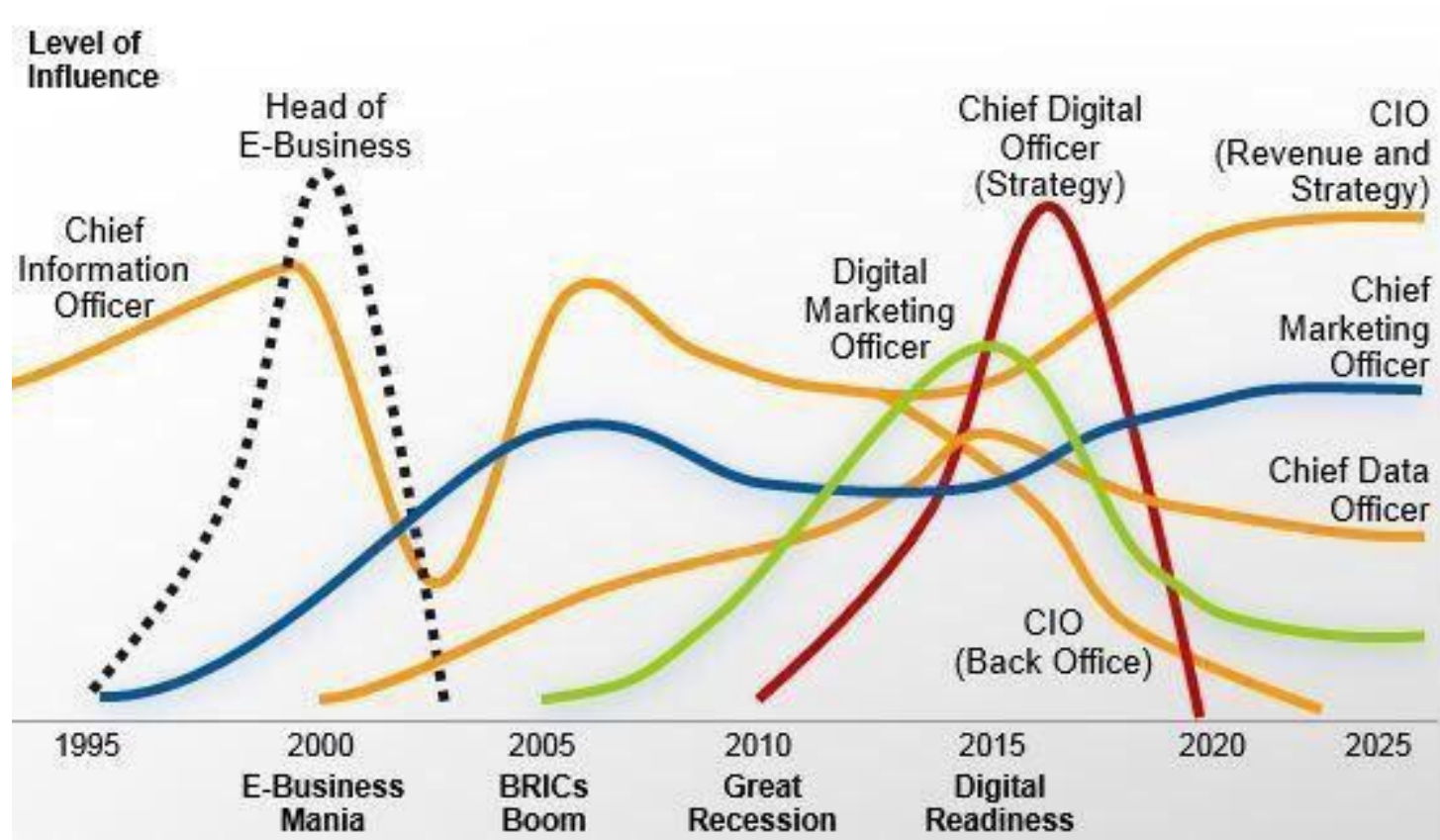
MEMBER SERVICE/VALUE PROPOSITION

PRIMARY ACTIVITIES



Initial Observations

- Business model changes
 - Decoupling field and industry
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- Marketing Logic vs. Digital Innovation
 - Disintermediation & the customer
 - Digital



Source: Theo Priestly @ITRedux



New Course: Digital Innovation & Entrepreneurship

Advisory board

- Invention and Innovation; Attacker's Advantage
- Change management; creativity; design thinking, innovation processes
- Problem / opportunity / pain identification
- Value propositions & competitive analysis
- Lean Startup; prototyping; market testing
- Funding & Resources; pitch
- Social media; networking
- Decoupling or compartmentalizing ideas; adjacencies
- Cross-platform, multiple devices
- Security & privacy concerns
- Soft skills; professionalism

New Course: Digital Innovation & Entrepreneurship



- Digital Business Models
- Emerging technology trends
 - Mobile / sensors
 - 3D printing
 - Ad targeting
- Financing new businesses
- Design, Creativity & Innovation



Thank You!

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