소프트웨어중심사회의 기업

Algorithmic Transformation and Enterprises

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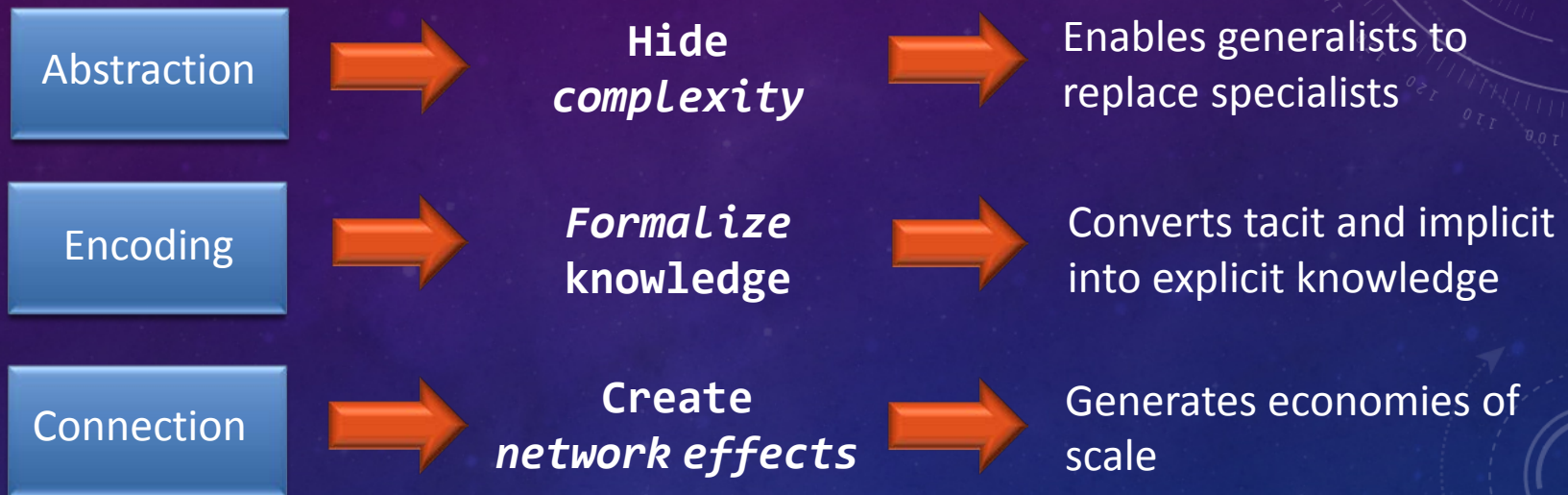
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Agenda

- Why Technology? Why Software?
- IT ZeitGeist – Algorithmic Transformation
- Technology and Business Trends in the AT Era
- Arrival of the Age of the Customer and its implications
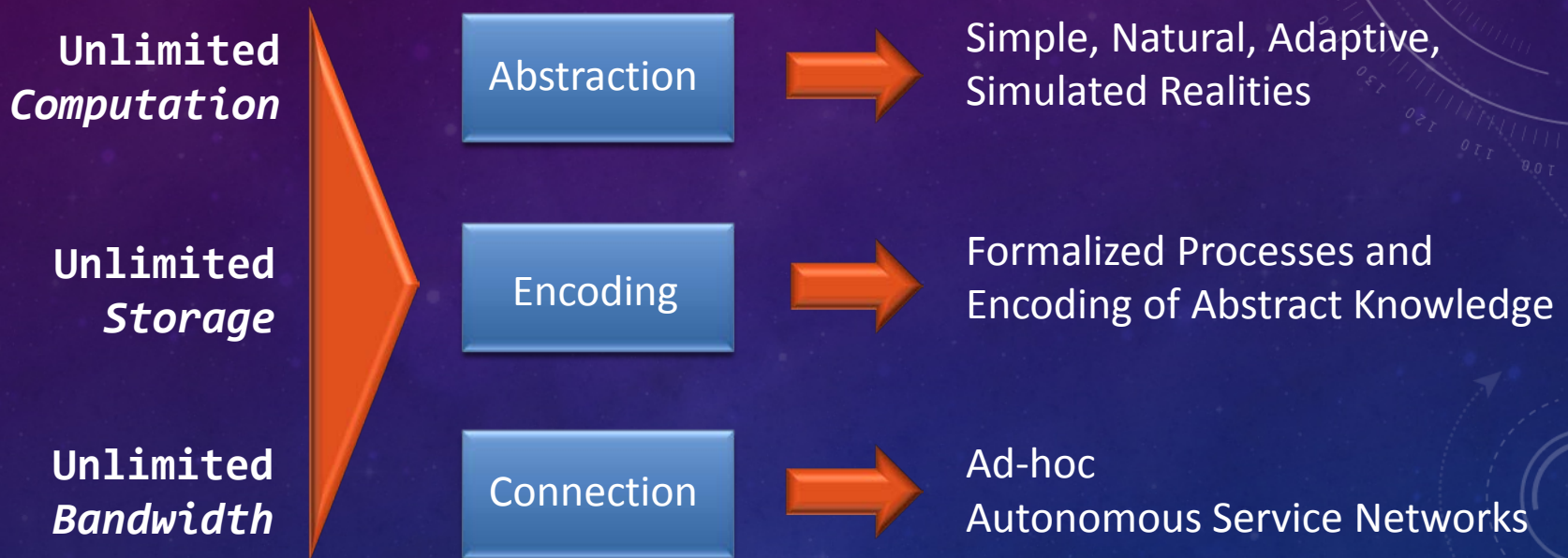
The Transformative Power of Technology

Abstraction	→	**Hide** *complexity*	→	Enables generalists to replace specialists
Encoding	→	*Formalize* **knowledge**	→	Converts tacit and implicit into explicit knowledge
Connection	→	**Create** *network effects*	→	Generates economies of scale

Technologies enable the *capture*, *distribution* and repeatable *application* of value creating knowledge .

-- Jonathan Murray, Innovia Strategies

An *Algorithmic** Transformation

Unlimited
Computation

Unlimited
Storage

Unlimited
Bandwidth

Abstraction → Simple, Natural, Adaptive, Simulated Realities

Encoding → Formalized Processes and Encoding of Abstract Knowledge

Connection → Ad-hoc Autonomous Service Networks

*Prof. John Zysman, BRIE – UC. Berkeley

Algorithmic Transformation Era

- We witness unprecedented abundance
  - Computing / Storage / Network
- Blurred distinction between tech vs. magic
  - Any sufficiently advanced technology is indistinguishable from magic (Clarke's Law[s])
- You just imagine it, and we'll build it
  - through Software, of course!
  - Everything that <u>can</u> be automated <u>will</u> be automated (Zuboff's Law[s])

Technology Trends in the AT Era

- Possibly familiar tech trends terms
  - SMAC[Social, Mobile, Analytics, and Cloud] + IoT
  - Gartner: The Nexus of Forces
  - IDC: The 3rd Platform
- The prediction paradox
  - Single technology paths vs. combinatorial outcomes
  - 3-5 yrs (easy) vs. 5-10 yrs (possible) vs. 10+ yrs (impossible)

Business Trends in the AT Era

- Globalization's Commodity Trap
  - Competition on price – the Red Queen's race
- Revenge of the dumb terminal and mainframe
  - Mobile + Cloud
    - Cloud as technical evolution and economic revolution
  - Driving the ICT-enabled services trend
- Customers truly at the center
  - Today's true scarcity is human time and attention
  - Empowered customers have given rise to a new age

Empowered Customers and a New Age

| 1900 | 1960 | 1990 | 2010 |

Age of
Manufacturing

Mass manufacturing makes industrial powerhouses successful

Age of
Distribution

Global connections and transportation systems make distribution key

Age of
Information

Connected PCs and supply chains mean those that control info flow dominate

Age of
the Customer

Empowered buyers demand a new level of customer obsession

The Age of the Customer (AoC)

A 20-year business cycle in which the most successful enterprises will reinvent themselves to systematically understand and serve increasingly powerful customers

— Forrester Research

Four Business Imperatives in the AoC

Systematically

Serve

Transform the Customer Experiences

Embrace the Mobile Mind shift

Age of the customer

Turn Big Data into Business Insights
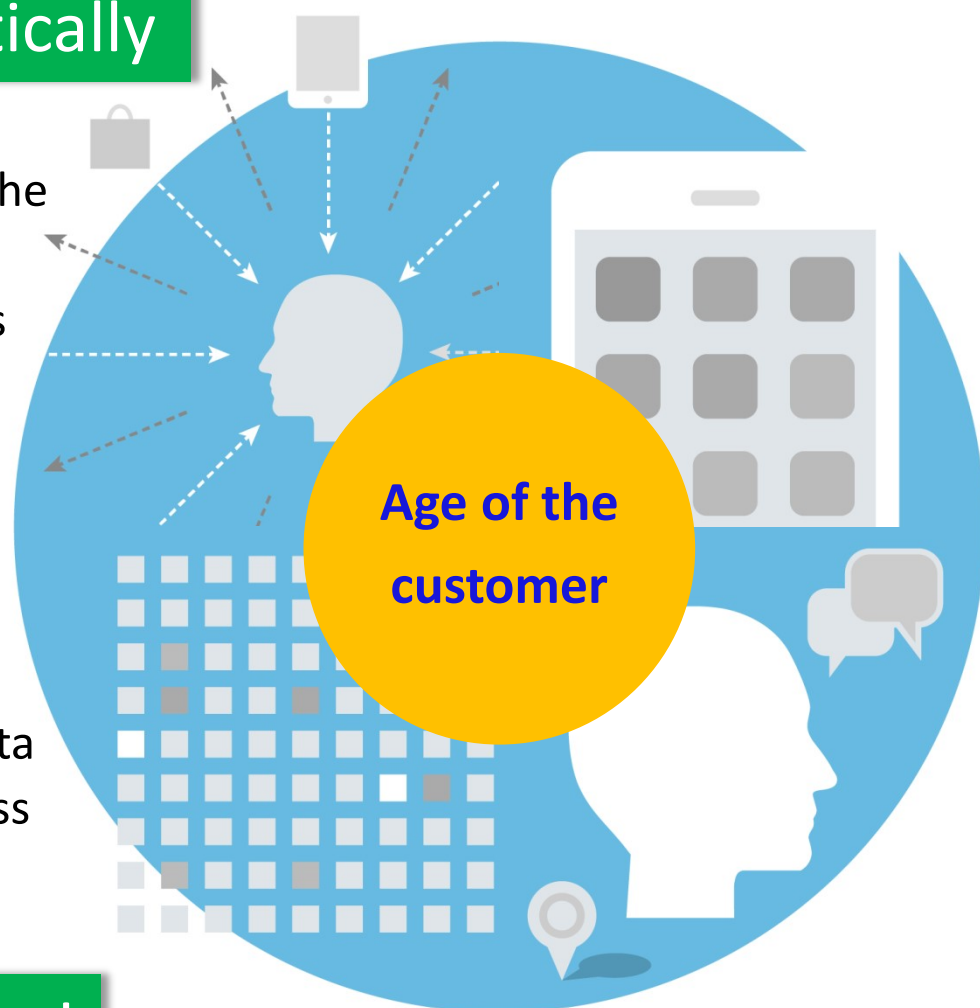
Become a Digital Disruptor

Understand

Reinvent

– Forrester Research

AoC and Technology Management

Technology Management = IT + BT
  IT is to automate business operations
  BT is to win, serve, and retain customers

IT costs will decrease...

- Application modernization
- Moving resources into cloud
- Increased standardization

BT budgets will increase

- Mobility
- Maintenance of customer big data
- Customer experience demands

Growth Hacking Culture

From	To
Independent	Build on others
Incumbent	Challenger
Feature focused	Obsess about customers
Blind optimism	Optimistic realism
Planner	Learner
Do lots	Be great

– Satya Nadella, Microsoft CEO

Growth Hacking – What's Different

Budget Priorities	Strategic imperatives		Budgeting changes	
	Do more of this:	Don't do this:	↑$	↓$
Real-time customer insights for products	Combine real-time monitoring and database insights; search for unarticulated needs	Slow survey-based research; untargeted email blasts	Social listening platforms; customer intelligence	Traditional research surveys
Customer experience and customer service	Fund a customer experience group that works across channels	Customer service staff goaled on call volume	Comprehensive customer experience; call center training	Single channel customer experience programs
Intelligent sales channels	Focus on end users and repeat business; build a customer database	Cram channels to inflate sales	Rich customer databases	Channel sales
Interactive content and marketing	Create content that drives inbound traffic; build mobile apps to engage customers	Roll-out knee-jerk social apps and advertising blasts	Goal-driven social and mobile apps; site content	One-way advertising

More Topics to Ponder

- Co-design and Co-evolution: How?
  - Hardware + Software (Devices and Services)
  - Technology + Business
- Platform Strategy: Business, security, etc.
  - Walled Garden vs. Open Grounds

Concluding Remarks

- The Algorithmic Transformation era
  - What are we going to do with ubiquitous and limitless resources?
- What is true scarcity in this new era?
  - Human time and attention matters!
  - Business technology demands will ever grow
- Growth hacking as a business imperative
  - Obsess over the customers