Beyond the Hype: Platforms and AI in the Era of Intelligent Tools and Systems

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My (assigned) Task:

Overview of the Digital Transformation

**BRIE:**
Berkeley Roundtable on the International Economy
(Brie.berkeley.edu)

&

**WITS:**
Work in An Era of Intelligent Tools and Systems
(Wits.berkeley.edu)
Intelligent Tools and Systems:

A New Set of Tools!

• Diffusing through economies and societies

• Changing how we work, earn, live
In the Era of Intelligent Tools and Systems:
Array of “Tales”, Labels, and **Hype**:

- **Blockchain/Crypto-Currency**
  - (Con? Or the end of Banks? Limited uses?)

- **Robots**
  - (End of Jobs or the end of drudgery? Transformation?)

- **Platforms**
  - (Promise of the internet delivered or a winner takes all economy?)

- **AI**
  - (Mankind as pets or just another phase in the digital story?)
Lurking Behind the Hype and Labels: Base Technologies

1. Computing Power
2. Digital Networks, Cloud Computing
3. Big Data
Focus Today

Consequences for Work and Competition

- **Platforms** (Digital Platforms)
- **AI** (Artificial Intelligence – machine learning)
Situating the Platform Story:
Platform basics:

Think of Shopping Malls

Two Sided (Digital) Mall/Markets:

- Who is Able to *Connect* with Whom, and how
  - Firms/buyers (Amazon)
  - Drivers/clients (Uber)
  - Apartments/clients (AirBnB)

- Changes *who is competing and about what in most industries*
  - New Entrants, new offerings
  - Often disrupts markets

Some platforms are winner take all, or most
Platforms: The Hyped Labels

Sharing Economy: Who Shares What with Whom?
• Sharing Platforms transfers risks and capital costs from firms to workers
• Disruptions and social rules:
  – Sometimes regulation serves a purpose, sometimes it block innovation
  – The “Uber Mantra”: Don’t ask permission. Ask forgiveness

Gig Economy: Temporary work began before digital platforms
• Platforms make Temporary work visible and “measurable”
  • Temp work/contracting
  • Professionals are independent contractors
• What do we count?
  • Old practices on line
  • New workers?

• Consequences of Gig and Sharing:
  • Small portion of the labor market
Platform Power:
Powerful beyond the Hype

1. **B to C**
   (FANG)
   - US & China dominate
     - The Cloud
   - *Europe?*

2. **B to B**
   (Industrial Internet?)
   - Yet to be settled
     - Industry v. Software
   - *European possibilities*
     - *Industrial platforms*
Stock Market Valuation – Top 10
(Permissioned theft from Martin Kenney)

Nov 2017

- **Apple (iTunes)** $881B
- **Alphabet/Google** $821B
- **Microsoft** $726B
- **Amazon** $676B
- **Tencent** $571B
- **Facebook** $552B
- **Berk Hath** $536B
- **Alibaba** $526B
- **J&J** $390B
- **ExxonMob** $377B

2002

- **Microsoft**
- **General Electric**
- **ExxonMobil**
- **Walmart**
- **Pfizer**
- **Citigroup**
- **J&J**
- **Shell**
- **BP**
- **IBM**
Situating the AI Story:
AI: Accelerates Growth and Power

A tool in the ongoing Digital Revolution
"...at their core, all the various types of AI technologies share a common goal—to procure, process, and learn from data, the exponential growth of which enables increasingly powerful AI breakthroughs “

Olaf Groth and Mark Nitzberg (Solomon’s Code)
The AI Revolution: Take the Original Ingredients, Add Algorithms and Stir (hence narrow applications)

1. Computing Power
2. Networks and the Cloud
3. Big Data
Why Algorithms and Stir?

• What is an algorithm
  – Instructions for the computer

• Certainly AI has clever instructions about how to “learn” from data patterns
  – Those “algorithms” aren’t entirely new

• Computing Power, Communications, Data
Flavors of AI

1. For Tomorrow, if at all
2. For Today
Flavors of AI

1. For Tomorrow, if at all
   - Singularity?
     - Robots smarter than people?
   - Fear: People as Pets?

2. For Today
   - Applications:
     - Narrow/specific –
     - Innovation
A Continuation/Not A New Revolution: Platforms/AI and Industry Choices

1. Supply Networks & The Commodity Trap

2. IcT Enabled Services & Intelligent Tools
The Industrial Commodity Trap:

- Global Supply Chains changed competition

- Competition at each Node: Commodification
  - Outsourcing
  - Offshoring
  - Price competition
Out from the Industrial Commodity Trap: Escapes from Pure Price Competition

Traditional Strategies include:
- Constant very rapid product development:
- Distinctive Niche Products

Some DIGITAL Additions

• IcT enabled Services : iPod!

• Platforms emerge reconfiguring production
Escape from the Industrial Commodity Trap:

The Role of Intelligent Tools

1. The ICT Transformation of Services

2. Intelligent Tools Throughout Production
Information Technologies:

IcT Enabled Services

• Products, and VALUE, become embedded in networked/platform services
  – iPod/iTunes
  – Cranes and Ports
  – Construction
  – Tires
  – Aircraft engines

• Platforms, as discussed above
  – B-C, Dominated by US and China
  – B-B a still-Open competition
The Ict (enabled) Production Transformation

Intelligent Tools & Systems

( One narrative version→ Industrie 4.0 )
THE OTHER DISRUPTOR
PRODUCTION SYSTEMS

Reconfiguring Production

• How Goods and services are created produced and distributed

• The Character of Work

• Skills
  – Creating a German and European advantage
Germany and the United States: Two Vantages on the Production Transformation

1. Production Traditions: Germany and Europe
2. Software and Services: Silicon Valley
2 Industrial Transformations – Potentials and challenges

Protecting know-how and competitive advantage

**Traditional strengths:** Hardware, industrial machines microelectronics, embedded systems, sensors, automotive

Industrial technologies Mechanical Engineering

Traditional strengths: Software, networks, server, clouds, Big Data, Artificial Intelligence, IT-Services

Internet of Things Machine Learning
Getting Beyond the Hype:
Consequences of AI and Platforms?

• For labor?

• For Business?
Getting Beyond the Hype:
Intelligent Tools and Systems

A Powerful Transformation
Much Research / Many Studies

• What Do we Know?
• What Don’t We Know
The Consequences?
for
Market Possibilities, Work, and Jobs

1. We Know VERY Little

2. MOST is Speculation, Hope, Fear
What do we actually know?

1. **Eliminated:**
   - Some Jobs and Tasks
   - Some businesses

2. **Created:**
   - New Jobs / Tasks
   - New Markets

3. **Transformed:**
   - Most Work
   - and Most Sectors
What we **definitely** don’t know!

1. **When:** How Fast
2. **Created:** What Market Possibilities/ Jobs
3. **Transformed:** How and What
Transformation: Consider Autonomous Vehicles

1. Long Distance Drivers
   - Assume autonomy emerges!
   - Jobs lost or driver shortage
   - Better Jobs?

2. Local Drivers
   - More deliveries more drivers
Transformation: Production and Competition In A Japanese firm

1. Production
2. Deployment and Sales
3. Support
OUTCOMES:

Depend on Deployment Strategies
How Will Intelligent Tools Be Deployed?

Crucial Questions include:

- **Routine**: Deployment strategies influence our understanding of what is routine.
  - Conversely, our understanding of what is routine shapes how technology is deployed

- **Judgments about the value of workers**:  
  - Workers as costs  
  - Workers as ASSETTS

- **Decisions about training**
The Importance of Germany To The American Discussion

- Reality of *alternative* deployment strategies
- Skills and skill based products in German exports
- Deploying technology to preserve skills and produce products that embed skills
Skills in An Era of Intelligent Tools:

1. General Skills:
   - From reading and writing
   - To Math and Tech

2. Synthetic:
   - Narrative / Interpretation
   - Case Specific
   - Basic human capacities
Can Business and Labor Interests Coalesce? How Will Intelligent Tools Be Deployed?

Creating Competitive Advantage is Central

BUT

Maintaining Long Term Advantage Requires Skills, IP, and Strategy
Beyond the Hype

Don’t Be Fooled By Silicon Valley
Temptations and Risks in the Digital Economy

Unicorns & Cheshire Cats: The new logic of venture finance

• The New Circumstances
  – Low entry costs for digital tools and platforms
  – Vast amounts of cash available globally
  – Many dramatic start-ups

• Contrasting outcomes
  – Unicorns: Some are real. They create fortunes and change industries
  – Cheshire Cats: Some fade away. Just the smile of early investors remains.