Strategic Uncertainty, Digital Technology and Formal Cause
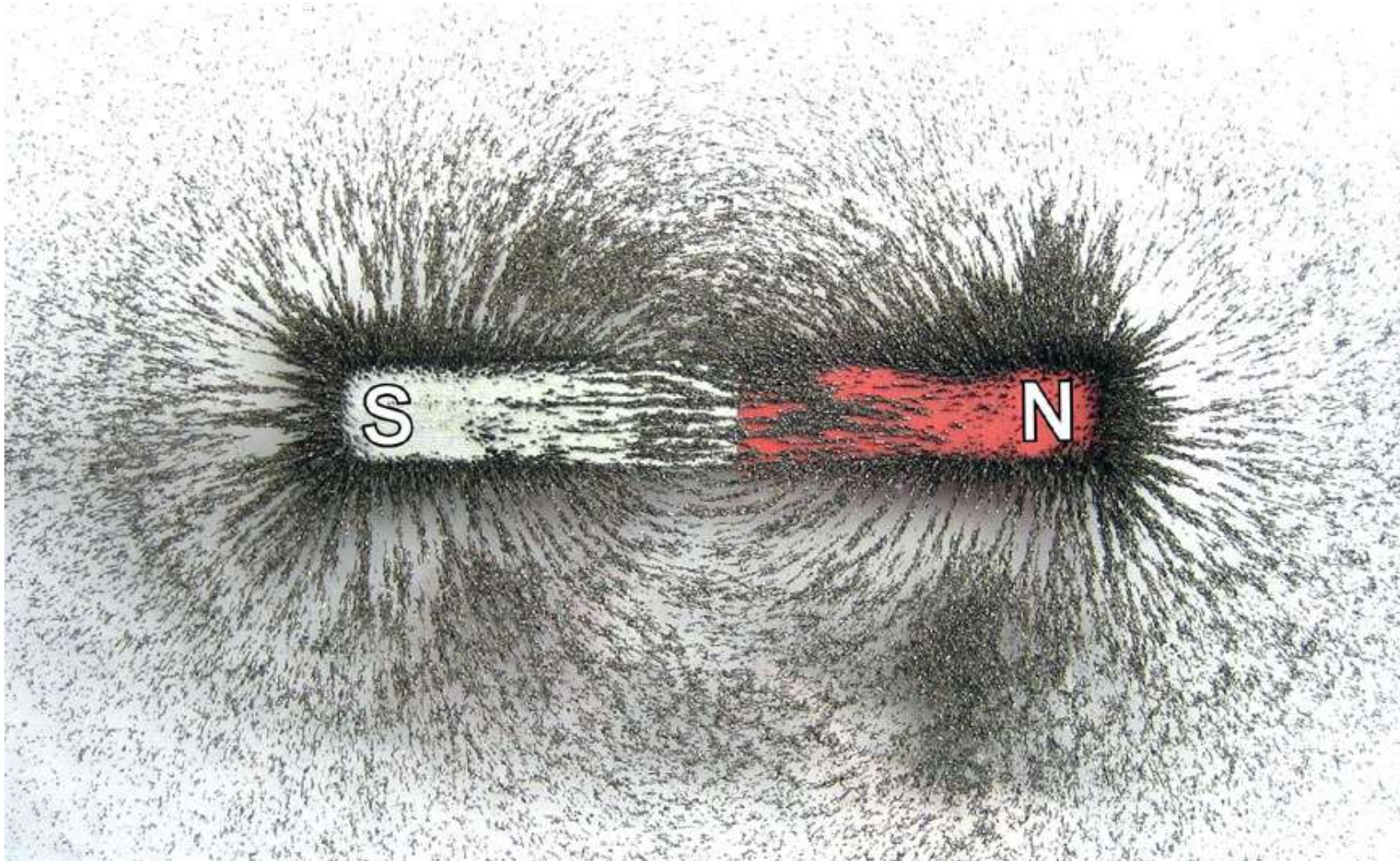
Strategic Uncertainty in National Security

Tuesday, 26 June 2018

Samuel Neaman Institute, Technion

Dr. Milo Jones
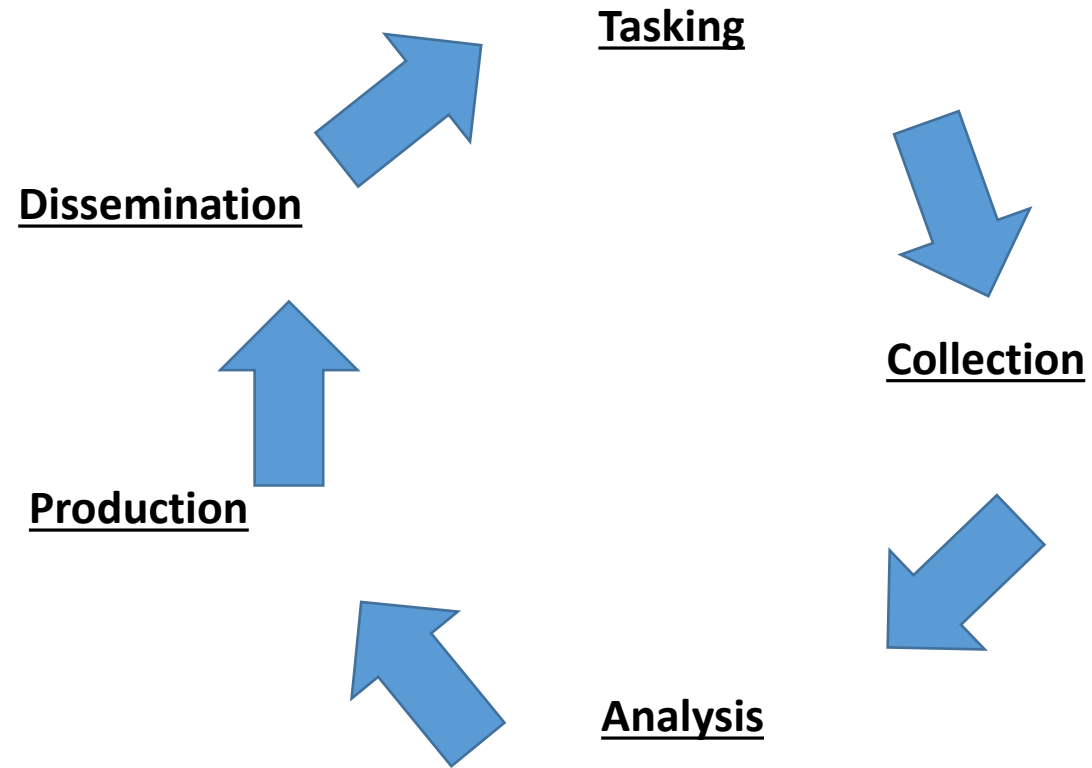
The Role of Theory (and Speculation)
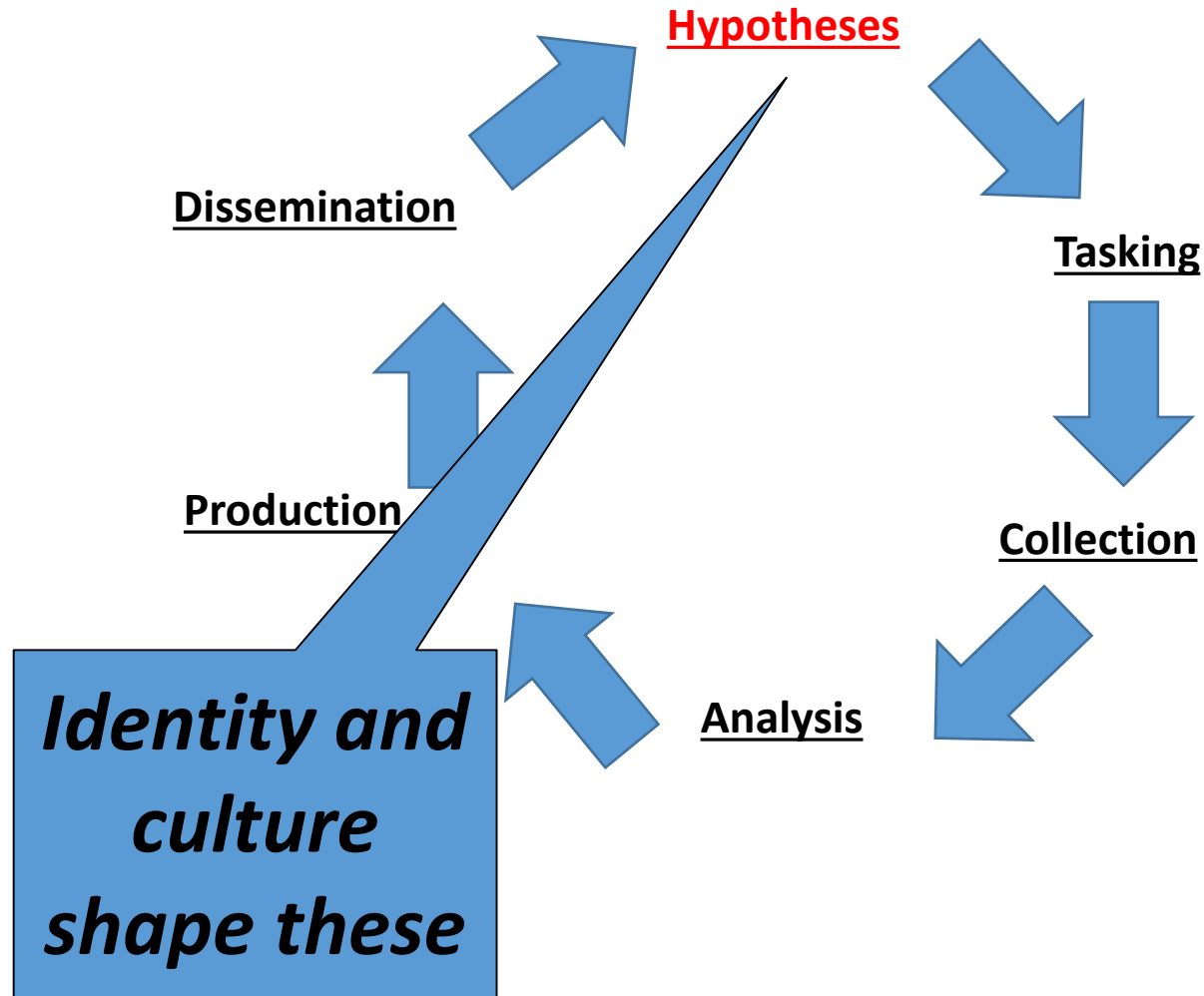
CONSTRUCTING
CASSANDRA

REFRAMING
INTELLIGENCE FAILURE
AT THE CIA,
1947-2001

MILO JONES AND
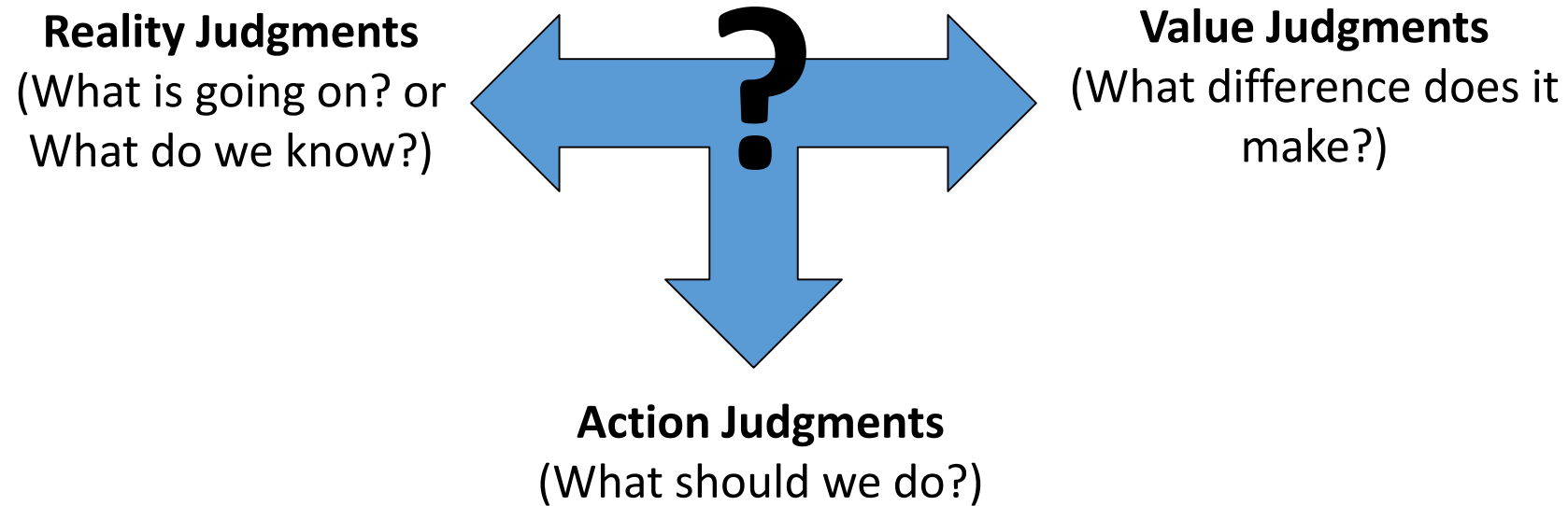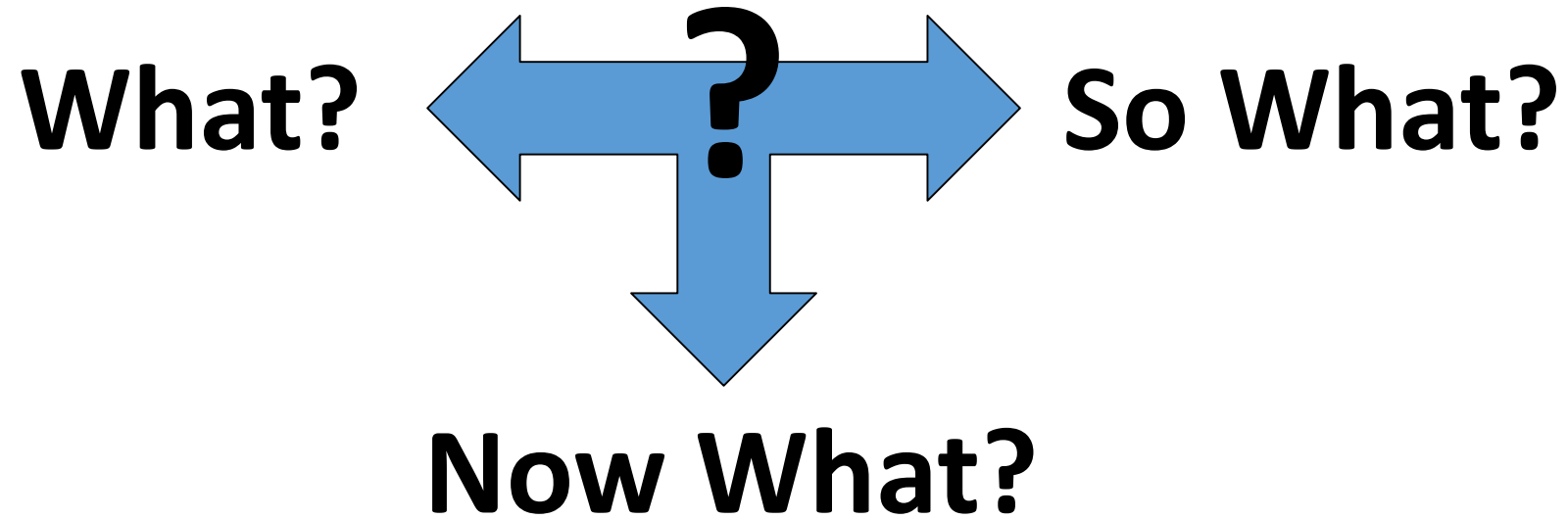PHILIPPE SILBERZAHN

The Old Intelligence Cycle

Tasking

Dissemination

Collection

Production

Analysis

A New Intelligence Cycle

Surprise Reaction Framework

- The Surprise Reaction Framework has three basic parts:

Reality Judgments
(What is going on? or
What do we know?)

?

Value Judgments
(What difference does it
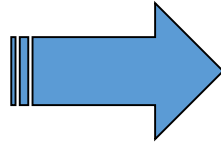make?)

Action Judgments
(What should we do?)

Surprise Reaction Framework Simplified

# What?

From Analogue/Electric to Digital Geopolitics?

- From hand-written script to mechanically-printed type (circa 1450) to electrically-transmitted codes (circa 1850), to voice and picture transmission (radio & TV) to digitally-stored memories, society has been shaped and re-shaped by changing technological structures.*

- Digital Technologies are now shaping and driving strategic uncertainty in all realms, and will continue to do so at an accelerating pace.

- They are becoming a **"Formal Cause",** i.e. they are structuring to our choices

- Formal causes are in contrast to "Efficient Causes", that just have effects

- Formal Causes are also not "Material Causes": absent human agency or intellect, there is no Formal Cause

*See: Mark Stahlman, "The Digital Sphere, Order and Chaos", 2016

From Analogue/Electric to Digital Geopolitics?

- This is another way of saying that I take a "technological constructivist" approach to the sources of strategic uncertainty
- This means, in John Culkin's formulation, that I hold that, "We shape our tools and, thereafter, our tools shape us."
- In short, technologies are not neutral: they have psychological and sociological consequences
- More and more of our real existence is mediated by digital devices
- Any approach to strategic uncertainty which does not begin by attempting to grasp how our subconscious and our societies are shaped by the technologies we use and then how our subconscious defines what we believe and how we act will misunderstand the nature of strategic problems
- Forget "Virtual Reality" - think **The Reality of the Virtual***

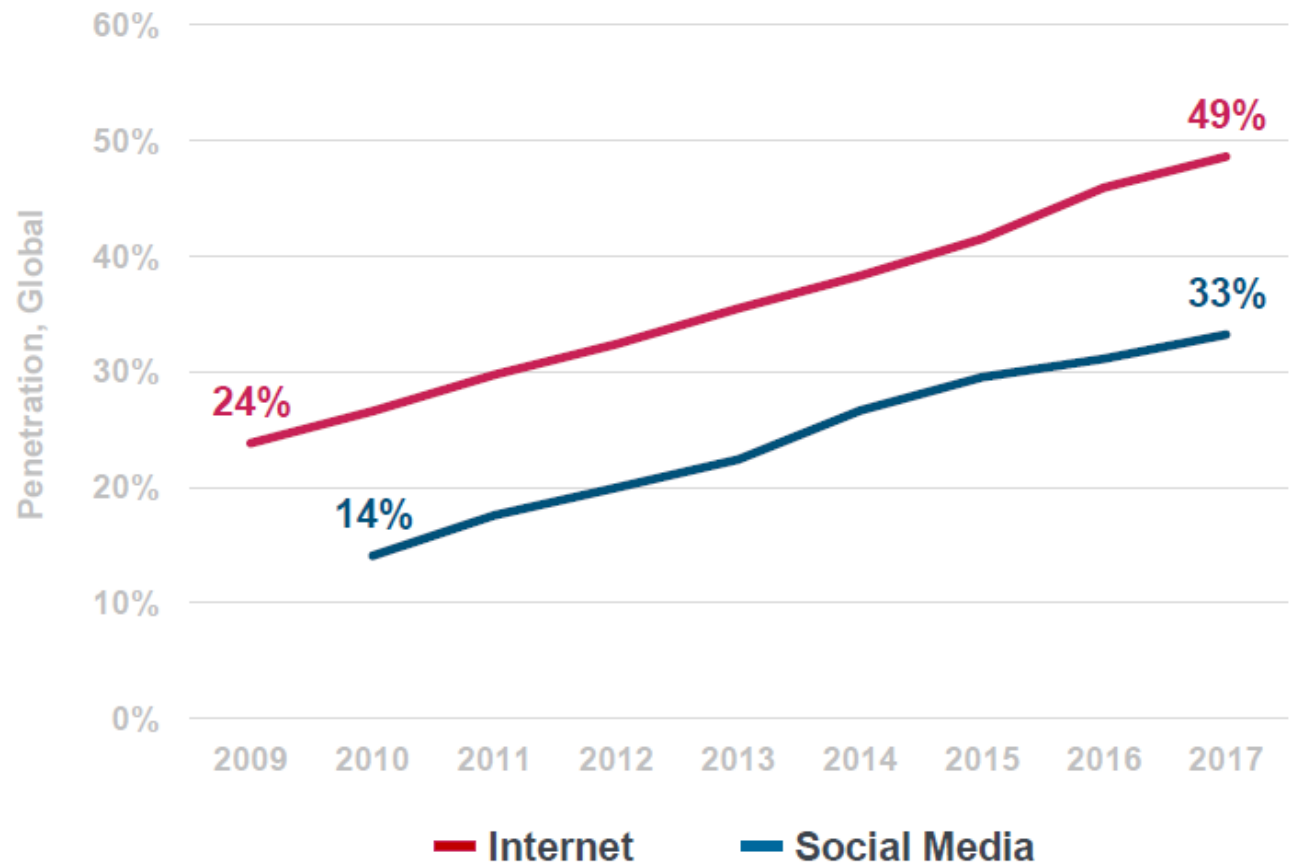*After Slavoj Zizek: Manufacturing Reality: Slavoj Zizek and the Reality of the Virtual

The latest from Mary Meeker

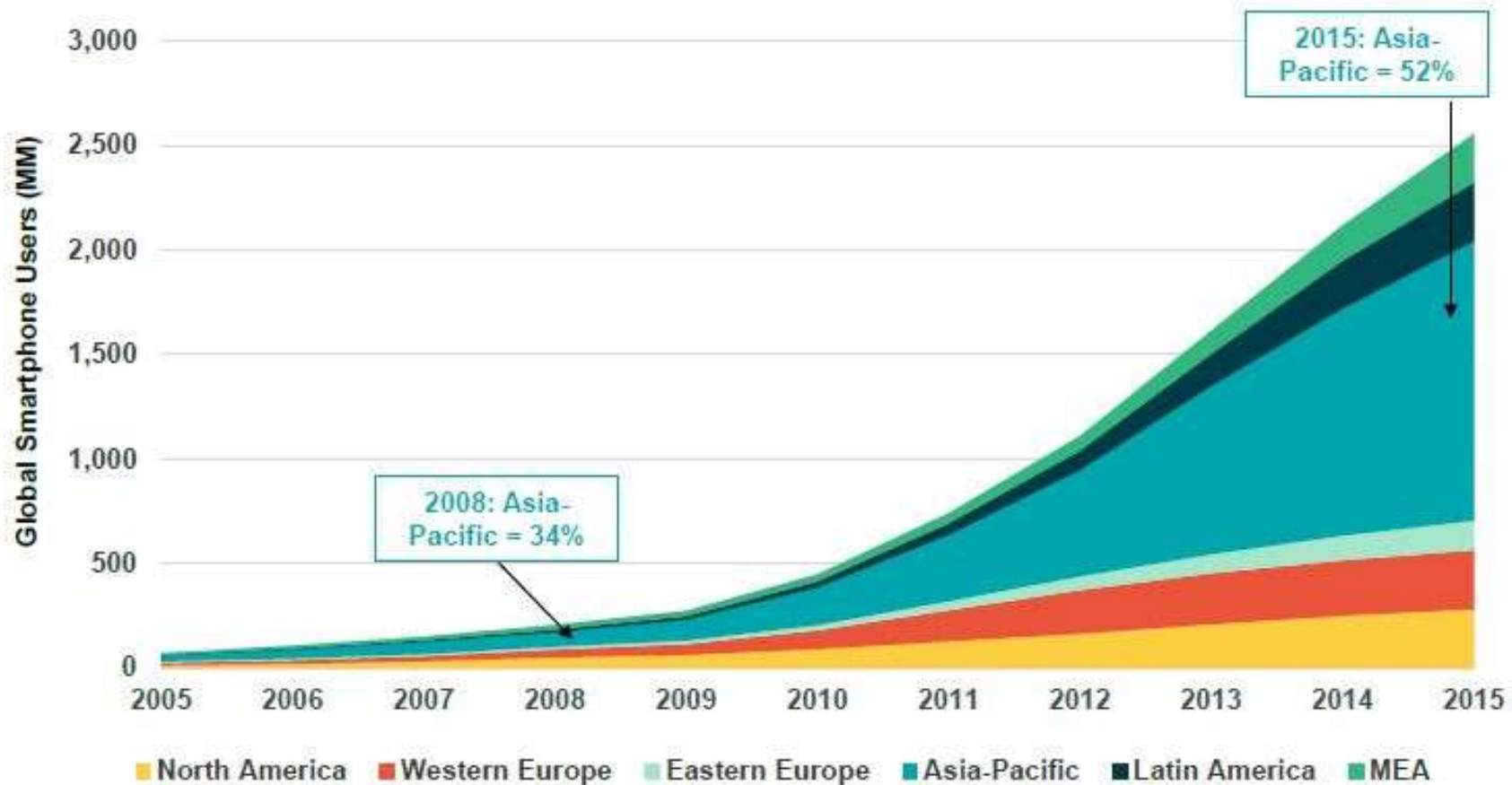
Daily Hours Spent with Digital Media per Adult User
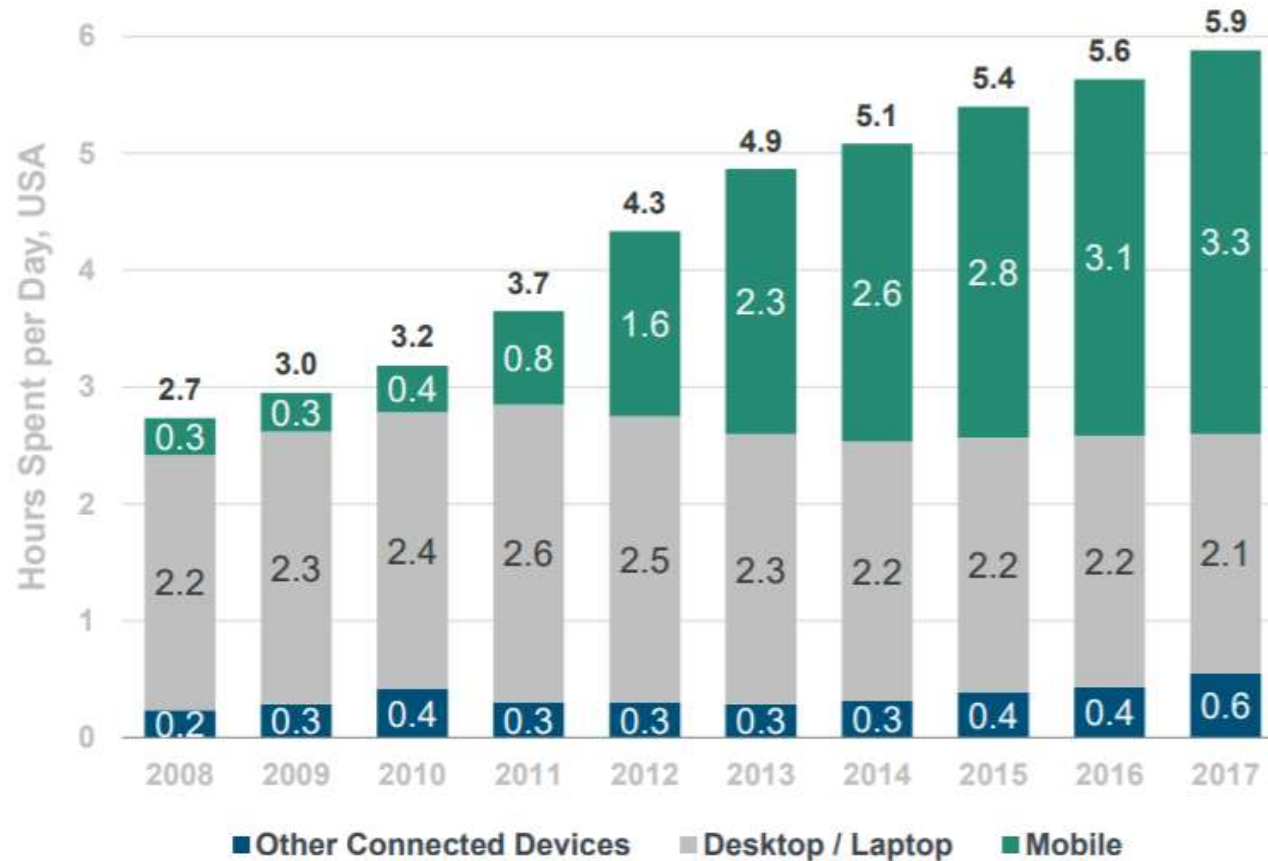
The latest from Mary Meeker

Internet + Social Media – Global Penetration

The latest from Mary Meeker
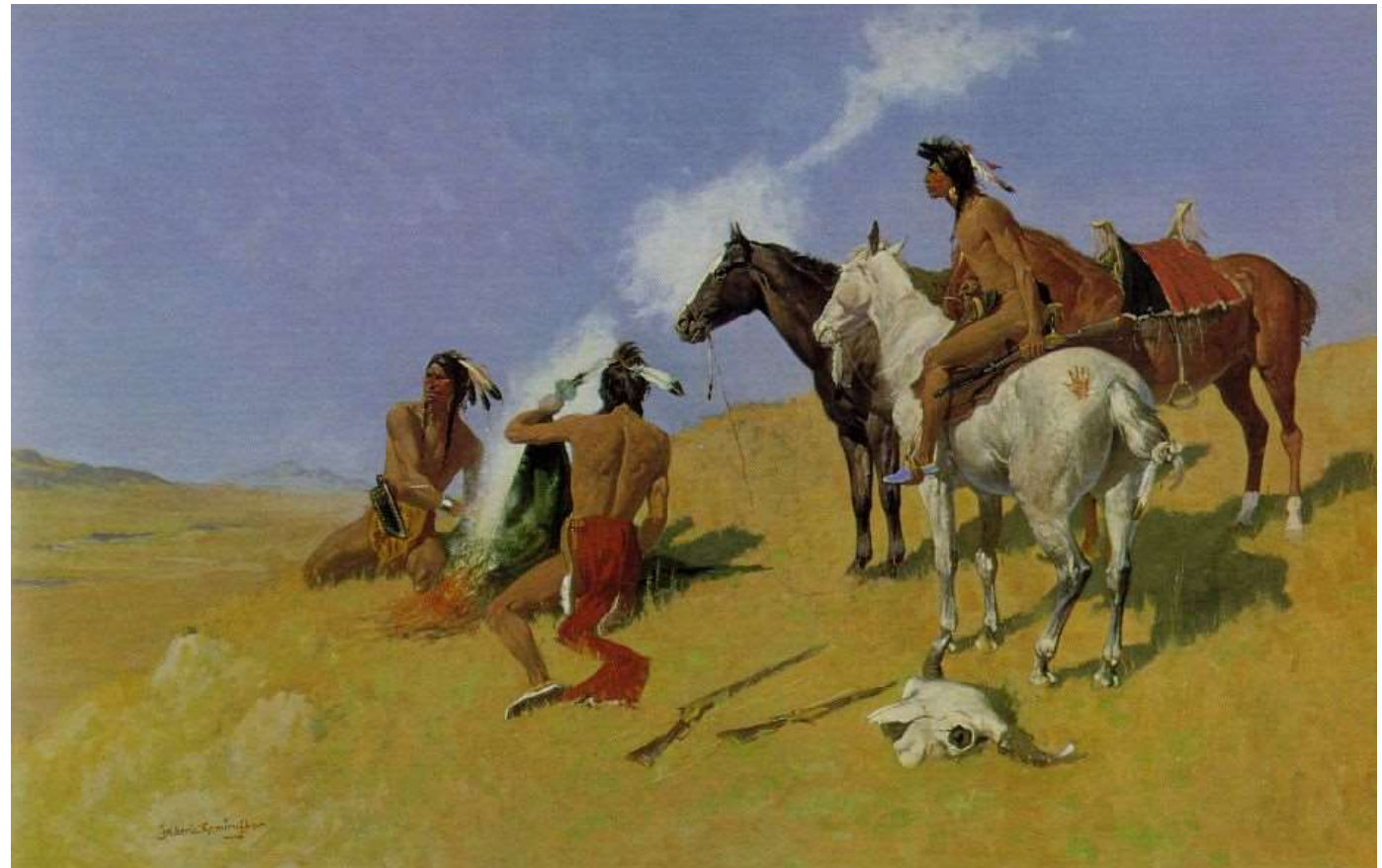

Smartphone Users, Global, 2005 – 2015

Y-axis: Global Smartphone Users (MM)

2015: Asia-Pacific = 52%

2008: Asia-Pacific = 34%

Legend: North America ■ Western Europe ■ Eastern Europe ■ Asia-Pacific ■ Latin America ■ MEA

Media Effects

Media Effects

McLuhan's Media Effects

- Marshall McLuhan is famous for the phrase, "The medium is the message"
- He meant that media influences both what messages are sent AND how messages are perceived
- Here the Message is the writing
- The Medium is the bomb!
- But the bomb and its effects are usually ignored or invisible as everyone focusses on the "content" of media

McLuhan's Media Effects

- McLuhan says that technologies have massive pre-conscious psychological effects on those who use them habitually

- They are "extensions of the self" that highlight some human faculties and deaden others

- New technologies create a completely new human environment in which peoples' views of themselves and of the world change

Media and Formal Cause

Marshall McLuhan

Eric McLuhan
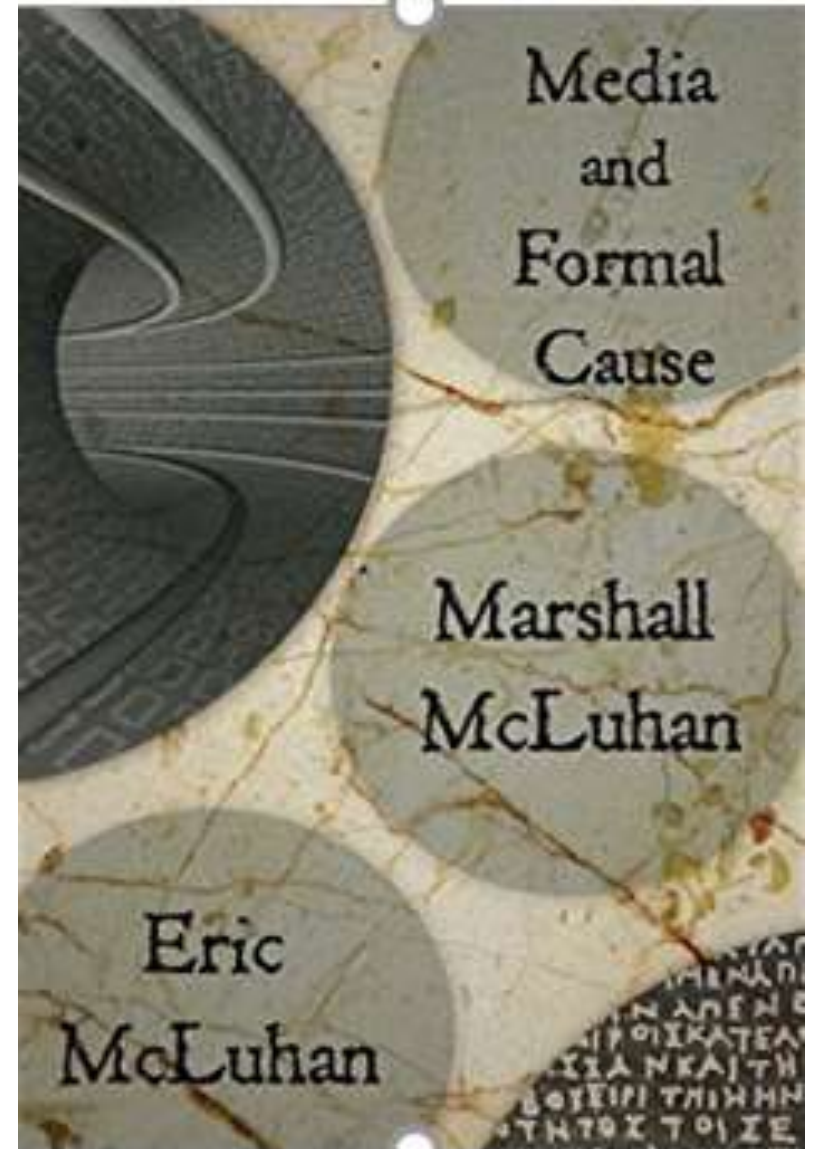
McLuhan's Tool to Probe Effects

- Every artifact, medium, or technology enhances some human function.

- It thereby obsolesces some former medium or technology, which was used to achieve the same function earlier.

- In so doing, the new medium or technology retrieves some older form from the past.

- When pushed far enough, the new medium or technology reverses or flips into a complementary (or contradictory) form.

ENHANCE
what does it amplify?

REVERSE
how does it flip when pushed?

M E D I U M

RETRIEVE
what does it bring back?

OBSOLESCE
what does it obsolese?

Tetrad of Media Effects

McLuhan (1988)

After: Zeynep Merve Iseri & Robert K. Logan, "Laws of Media, Their Environments and Their Users: The Flip of the Artifact, Its Ground and Its Users
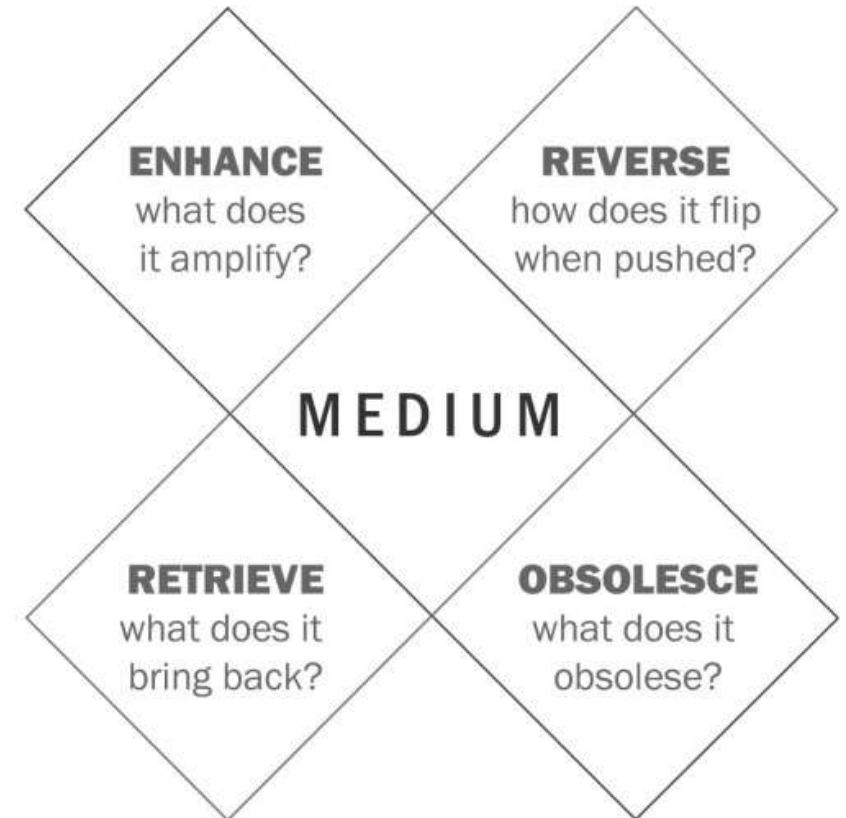
McLuhan's Tool to Probe Effects

- Example of the Tetrad to probe a media/technologies effects: the invention of money.

- Money:

- Enhanced trade and commerce

- Obsolesced the barter system

- Retrieved the conspicuous consumption of hunter-gatherers

- Flipped into credit, a complementary form

ENHANCE
what does it amplify?

REVERSE
how does it flip when pushed?

MEDIUM

RETRIEVE
what does it bring back?

OBSOLESCE
what does it obsolese?
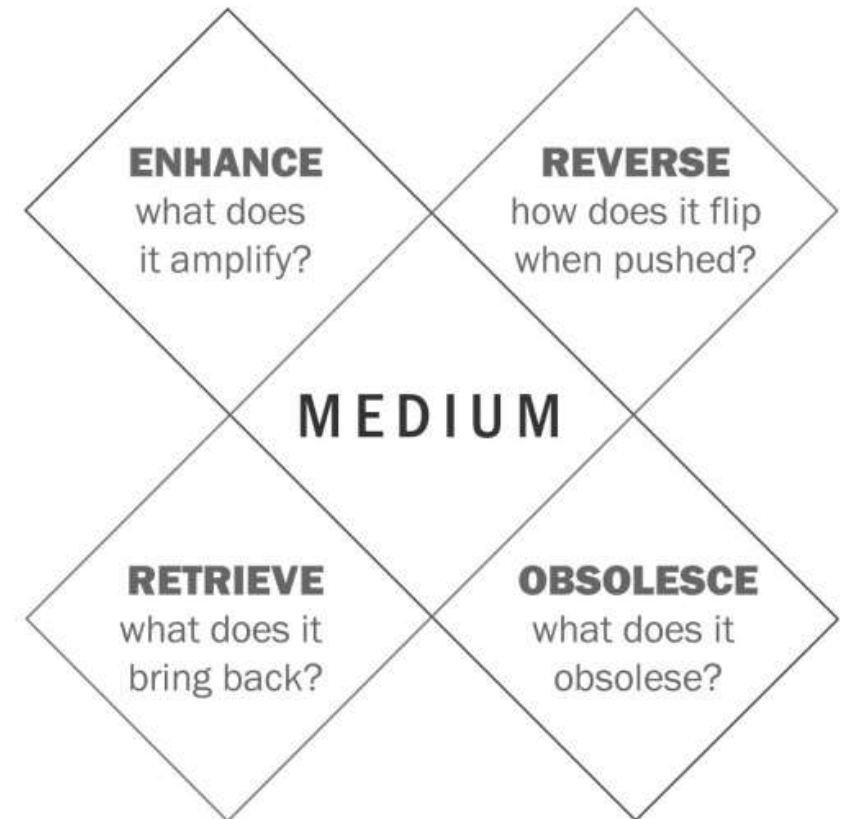
Tetrad of Media Effects

McLuhan (1988)

So What?

New Media are changing tactics

THE AGE OF SELFIE JIHAD: HOW EVOLVING MEDIA TECHNOLOGY IS CHANGING TERRORISM

Abstract: Extremists have sought to exploit the latest media technology to instill fear in target populations and elicit support from sympathetic audiences. In order to aid their recruitment, they adapt their tactics and strategy and structure their organizations accordingly. Recent rapid technological change that allows terrorists to reach a large audience quickly and directly has enabled them to achieve their messaging goals without launching large-scale attacks that demand significant physical infrastructure. Increasingly, thanks in part to the digital revolution, they can rely on what the Syrian jihadi strategist Abu Musab al-Suri called "individual terrorism." With the Islamic State losing territory and the al-Qa'ida network increasingly decentralized, individuals and small autonomous cells may increasingly take the initiative in both the murderous and messaging dimensions

"Digital technologies" extend beyond media

Figure 48. Employment share at risk by industry

	Low Risk (%)	Medium Risk (%)	High Risk (%)
Accommodation & Food Services	2.8%	10.5%	86.7%
Administrative & Support Services	1.6%	36.2%	62.2%
Agriculture, Forestry, Fishing & Hunting	75.6%	12.0%	12.3%
Arts, Entertainment & Recreation	47.9%	12.5%	39.6%
Construction	21.6%	19.8%	58.6%
Educational Services	63.1%	19.7%	17.2%
Finance & Insurance	28.9%	17.3%	53.7%
Government	46.2%	30.6%	23.2%
Health Care & Social Assistance	39.4%	25.0%	35.6%
Information	51.6%	38.3%	10.1%
Management of Companies & Enterprises	82.8%	6.2%	11.0%
Manufacturing	19.9%	18.4%	61.7%
Mining, Quarrying and Oil & Gas Extraction	7.8%	46.3%	45.9%
Other Services (ex Public Admin)	44.9%	24.7%	30.4%
Professional, Scientific & Technical Services	54.0%	10.9%	35.1%
Real Estate and Rental & Leasing	0.7%	32.0%	67.2%
Retail Trade	14.5%	18.9%	66.6%
Self-Employed	60.4%	8.9%	30.7%
Transportation & Warehousing	5.5%	19.4%	75.0%
Utilities	40.3%	27.8%	31.9%
Wholesale Trade	15.9%	18.4%	65.7%

Source: Oxford Martin School

From: Carl Benedikt Frey and Michael A. Osborne , "THE FUTURE OF EMPLOYMENT: HOW SUSCEPTIBLE ARE JOBS TO COMPUTERISATION?", 2013

"Digital technologies" extend beyond media

Figure 1. Peak Manufacturing Employment Share and GDP per Capita When It Peaked
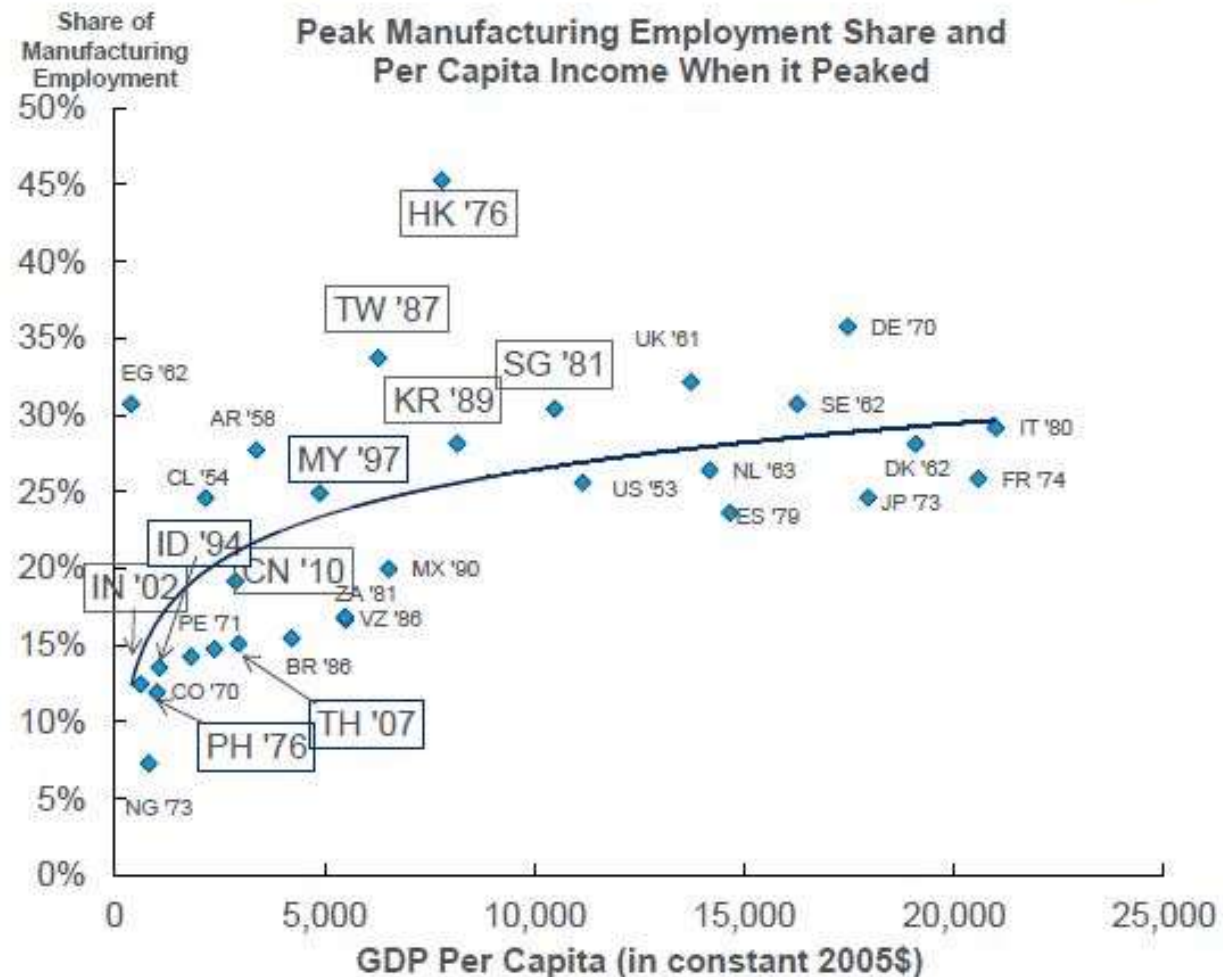
Source: GGDC-10 Sector database, World Bank Development Indicators, Citi Research

Premature Deindustrialization?

Premature Deindustrialization?

SEWBO   CAREERS   PRESS KIT

Sewbo, Inc. is pleased to announce that it has used an industrial robot to sew together a T-shirt, achieving the long-sought goal of automation for garment production.

Sewbo's technology will allow manufacturers to create higher-quality clothing at lower costs. It will shorten supply chains and lessen the long lead times that hamper the fashion and apparel industries, helping to reduce the complexity of today's intricate global supply network.

How it Works

Despite widespread use in other industries, automation has made little progress in clothing manufacturing due to the difficulties robots face when trying to manipulate limp, flexible fabrics.
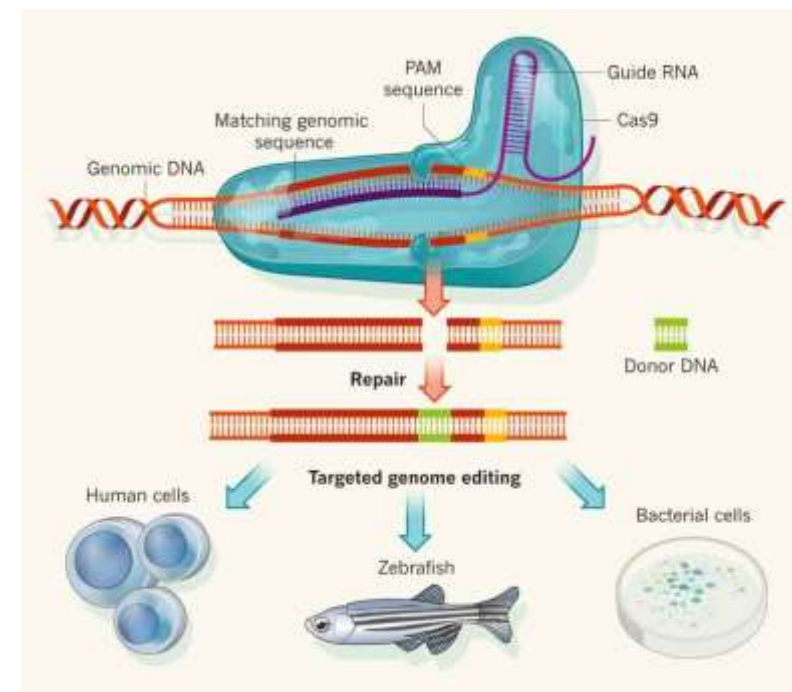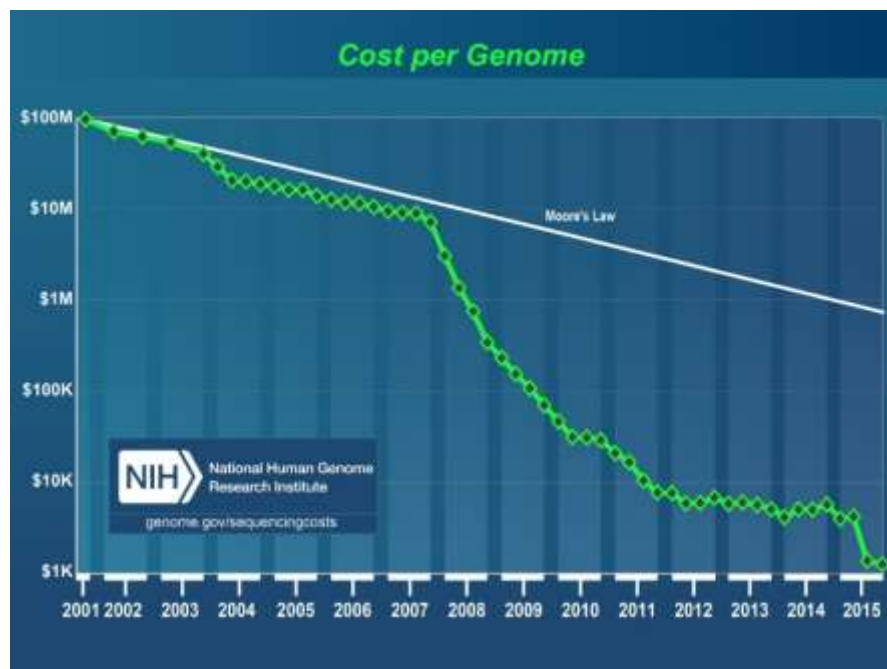
Sewbo avoids these hurdles by temporarily stiffening fabrics, allowing off-the-shelf industrial robots to easily build garments from rigid cloth, just as if they were working with sheet metal. The fabric
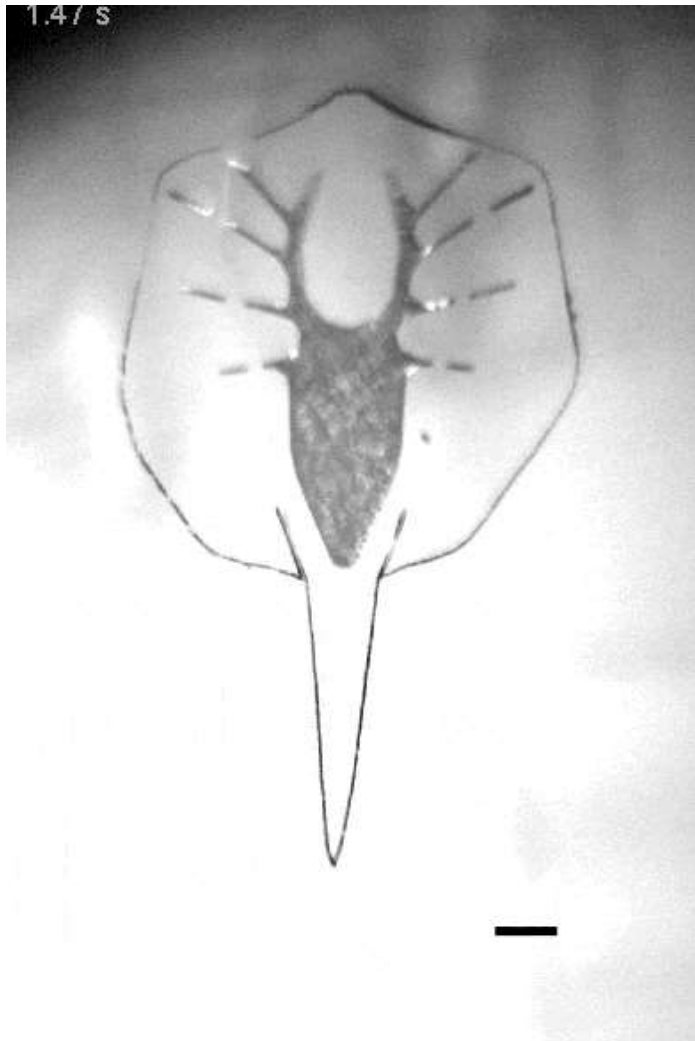
Premature Deindustrialization?
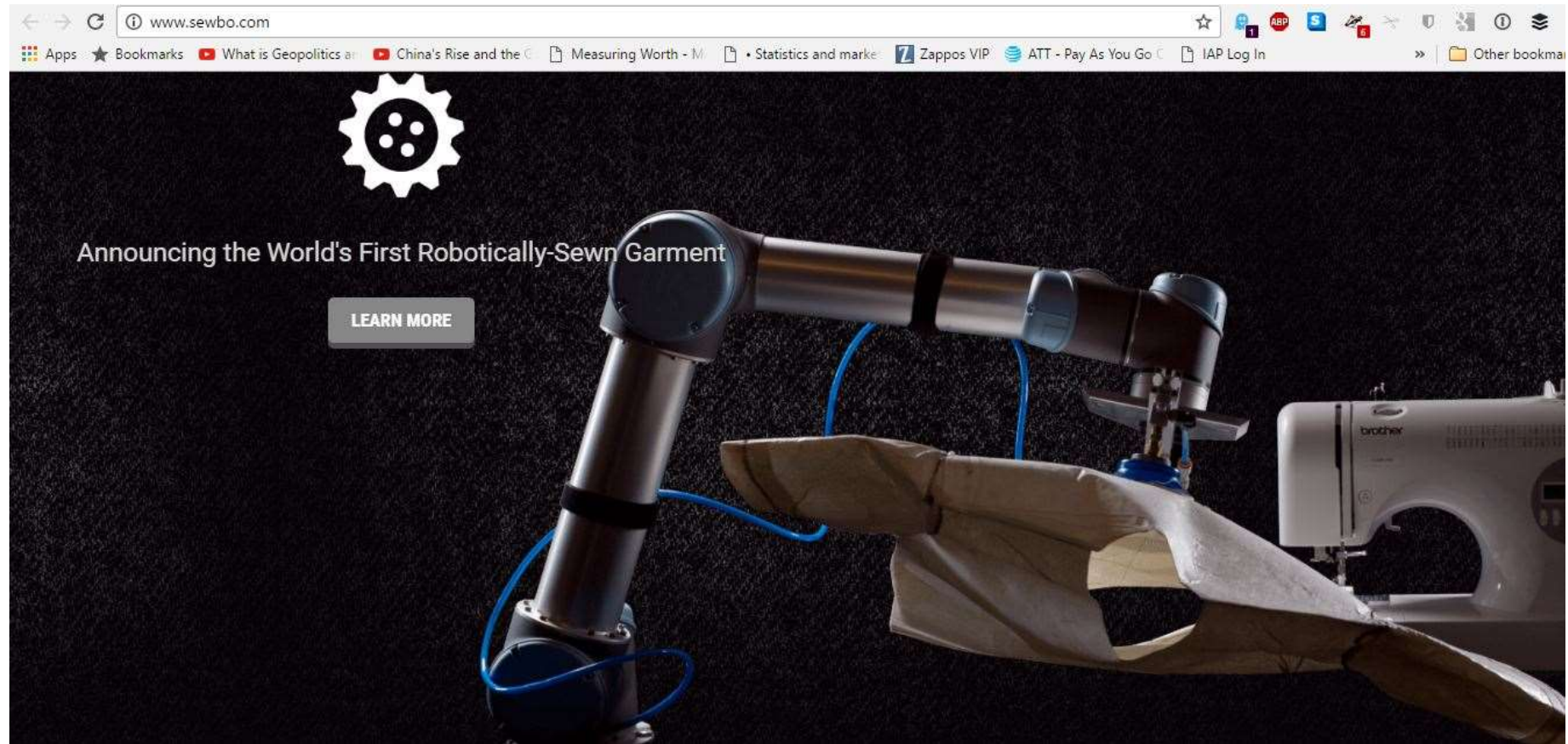
"Digital technologies" extend beyond media

Future Dual Use Technologies?!

**MIT
Technology
Review**

Robotics

Robotic Stingrays Made with Rat Heart, Algae, and Plastic Fins

Scientists control the bionic fish with light.

by Ryan Cross   July 7, 2016

Scientists have built a robotic stingray made of heart muscle cells from a rat, a skeleton of gold, plastic fins, and light-activated algae proteins— because, why not?

"Digital technologies" extend beyond media

Now What?

Digital retrieves the medieval?

- Does "Digital retrieve the Medieval" in national security/geopolitics?
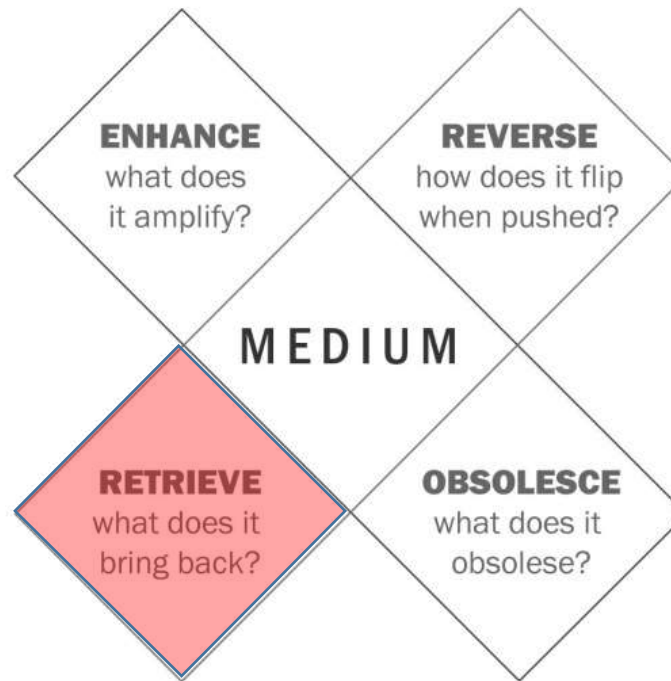
Tetrad of Media Effects
McLuhan (1988)

Digital retrieves the medieval?

- Things won't "settle down" – we are still at the "horseless carriage" stage of digital technology, where the new form is largely used in old ways

- Most nation states in existence are products of previous media: print, radio and TV

- How will they fare under digital conditions?

Implications?

A DISTANT MIRROR
THE CALAMITOUS 14th CENTURY

BARBARA W. TUCHMAN

- Some parallels:
  - Transnational aristocracy (elites) of concentrated wealth and ambiguous nationality (and new allegiances)
  - States lack a monopoly on "legitimate" violence
  - Non-state actors capable of challenging states
  - A shift from global to local allegiances
  - New industries and technologies
  - New ideologies
  - New plagues
  - Amplified strategic uncertainty!

Implications for strategic uncertainty

- Nations are courting "Barons", powerful non-state actors

OFFICE OF DENMARK'S TECH AMBASSADOR
Silicon Valley | Copenhagen | Beijing

TECHPLOMACY   TEAM   CONTACT

Tech Ambassador
of **Denmark**

MINISTRY OF FOREIGN AFFAIRS OF DENMARK

The Office of the Danish Tech Ambassador has a global mandate and a physical presence across three time zones in Silicon Valley, Copenhagen and Beijing - transcending borders and regions and rethinking diplomacy.

Tech and digital diplomacy, in short TechPlomacy is an acknowledgement of the key role tech plays and will increasingly play in the future for individuals and societies alike.

This new diplomatic approach is spearheaded by the world's first ever Tech Ambassador, Mr. Casper Klynge, supported by a global diverse team spanning three continents.

Implications for strategic uncertainty

- We can expect more migration…(there's an app for that!)

Implications for strategic uncertainty

- We are building walls again…

Implications for strategic uncertainty

- The Tang Dynasty "Silk Route" is being rebuilt…
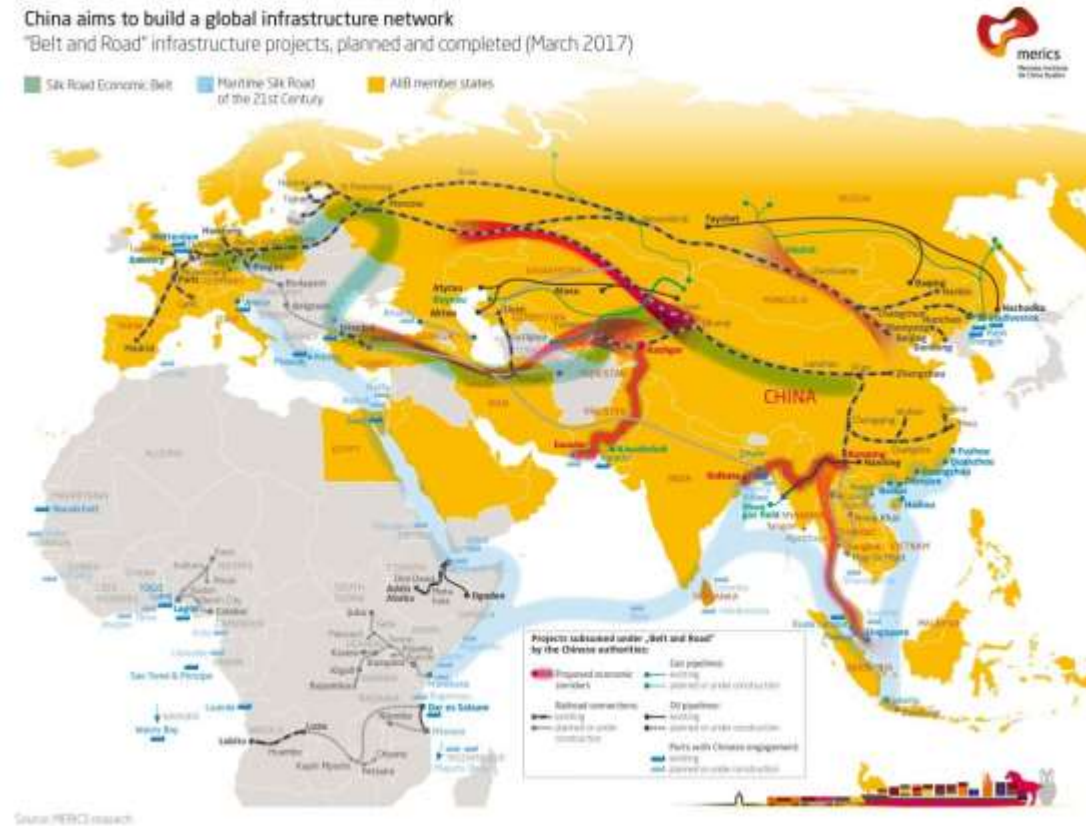
Implications for strategic uncertainty

• Medieval Islam is back on the march? ISIS suggests it is!

Implications for strategic uncertainty

- Medieval Persia perhaps returning?

Implications for strategic uncertainty

- The Ottomans are perhaps returning?

THE OTTOMAN EMPIRE

Implications for strategic uncertainty

- At the very least, the cost of creating new affiliations just as the old ones are under strain is dropping

To get (even more?) speculative…3 Spheres

- The CSDL* posits that under digital conditions, Three Spheres (Operating Systems for Societies with global reach) are forming (somewhat like Huntington's "civilizations", but fewer)
- The basis of each sphere is written language, which lies at the root of our technology-driven communication and mental habits
- Each sphere is being led by distinct groups of elites, racing to make use of the digital

Center for the Study of Digital Life: http://www.digitallife.center/

The "West": Alphabetic

- Is the West particularly vulnerable to digital effects?

A B C D E F G
H I J K L M N O
P Q R S T U V
W X Y Z

a b c d e f g h i j
k l m n o p q r s t
u v w x y z

(a) English

А а (A)
Б б (B)
В в (V)
Г г (G)
Д д (D)
Е е (E)
Ё ё (YO)
Ж ж (ZH)
З з (Z)
И и (I)
Й й (Y)
К к (K)
Л л (L)
М м (M)
Н н (N)
О о (O)
П п (P)

Р р (R)
С с (S)
Т т (T)
У у (U)
Ф ф (F)
Х х (KH)
Ц ц (TS)
Ч ч (CH)
Ш ш (SH)
Щ щ (SHCH)
ъ (–)
ы (Y)
ь (')
Э э (E)
Ю ю (YU or IU)
Я я (YA or IA)

(b) Cyrillic

The "East": Ideo/pictographic

- Is the East better-suited to digital conditions due to its traditional abhorrence of technology that disrupt social cohesion?

The "Digital": Binary

- Culturally: "the end of humanity-as-we-know-it" (a "Post-human future)

- Economically: endless "disruption" and "exponential growth"

- Security: a panopticon, with public/private-sector-enabled algorithms watching everyone as potential targets

- Politically: neo-eugenics? Certainly the idea of assumed equality under the law and democracy come under strain!

At the very least, ask….

- Are technologies really as "neutral", psychologically and sociologically, as science usually assumes?

- Can the new matrix of causal factors which digital technologies bring about – a new structure for our choices – really be ignored?

- Is a "One world" or "Global order" paradigm of future international relations getting more or less likely?

- Is it time to start thinking about "Strategic uncertainty under digital conditions"?

Thank you

Questions?