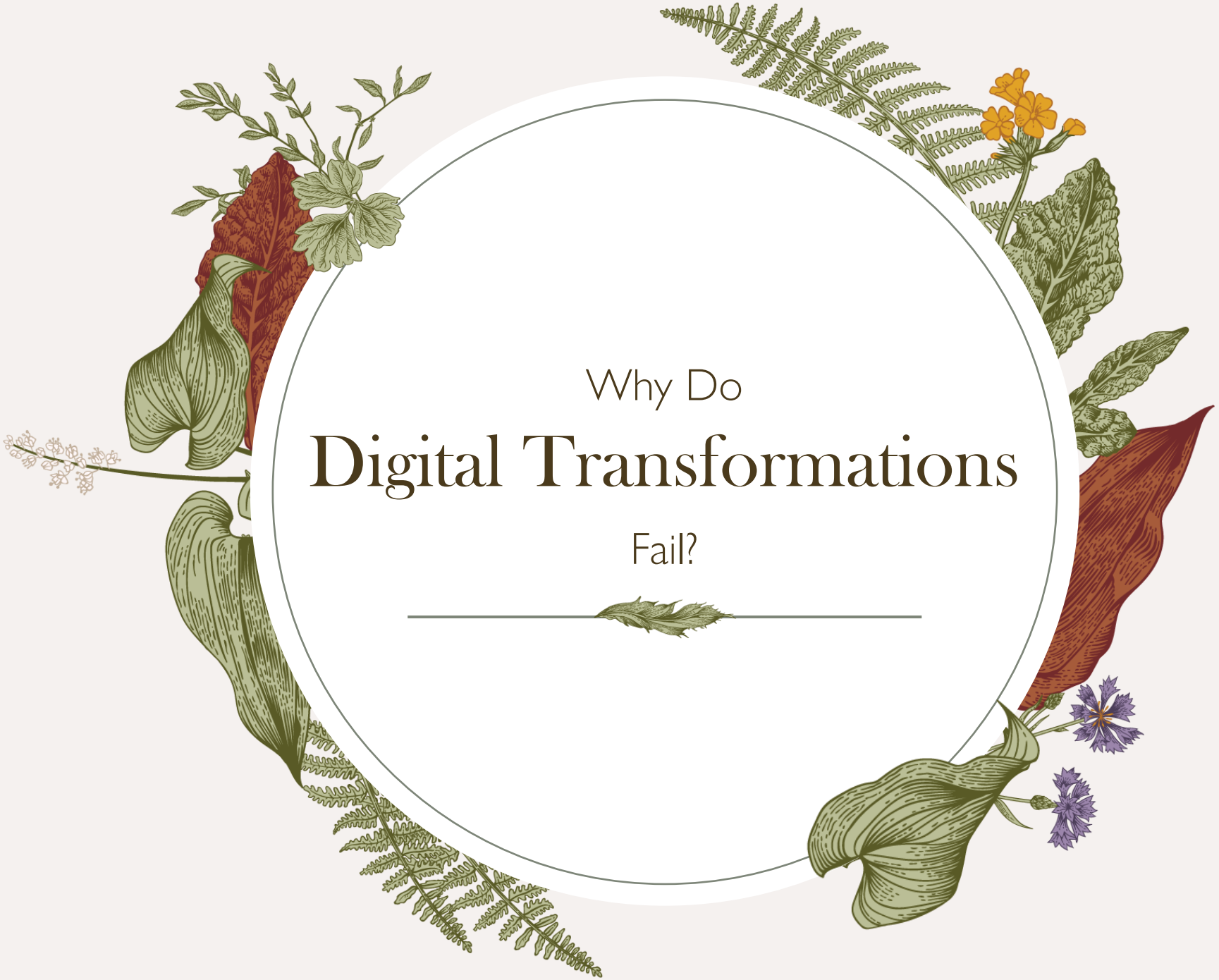


Why Do

Digital Transformations

Fail?

Written and Presented by

Stephen Downes

for

CNIE 2023, May 24, 2023

https://www.downes.ca/presentation/571

Not authored by any AI

Designed using the Microsoft 'Baby Shower Slide Show' theme

Help us welcome

New Technology

to the world

Help us welcome

What could go wrong?

to the world

The Question

Why do digital transformations fail?

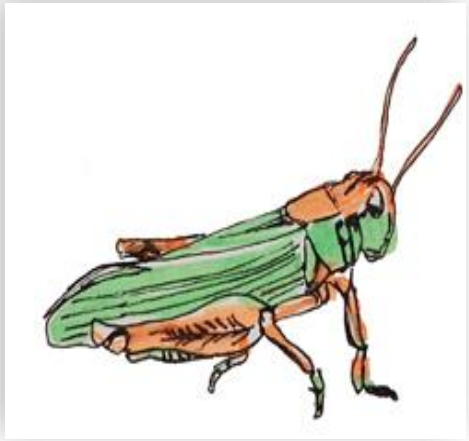
Accenture: "Digital transformation is *the process by which companies embed technologies across their businesses to drive fundamental change*."

IBM: "Digital transformation means *adopting digital-first customer, business partner and employee experiences*."

Wikipedia: "Digital transformation is *the adoption of digital technology by an organization to digitize non-digital products, services or operations*."

Gartner: "Digital transformation can refer to anything from IT modernization (for example, cloud computing), to digital optimization, to the invention of new digital business models."

How We Got Here



Web3
el30.mooc.ca

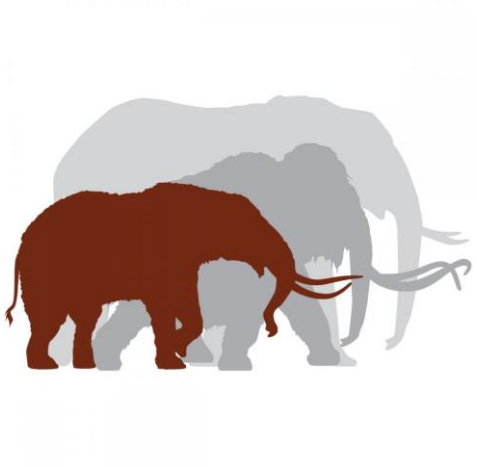
AI Ethics
ethics.mooc.ca

Data Literacy
data.mooc.ca

Lurking in the Background…

How We Got Here

Tech Guide
bit.ly/quicktechguide



Fediverse
downes.ca/presentation/566

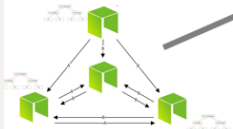
Barriers
drdc-rddc.gc.ca

This Past Year or So…

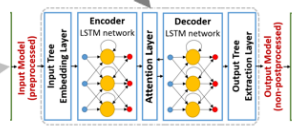
what the new tech does

Artificial Intelligence

Trusted Data



- Data Models
- Algorithms
- Application

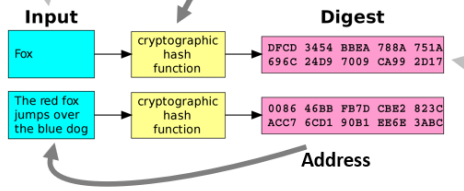


Model Selection
Explainability
Appeal and Accountability

Blockchain

- Provenance
- Ownership

- Content Addressing (Blocks)
- Merkle Graphs (Chains)
- Consensus



- Openness
- Access

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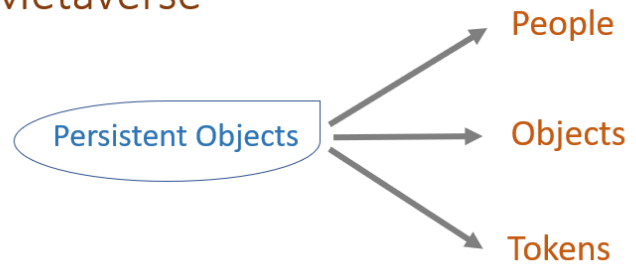
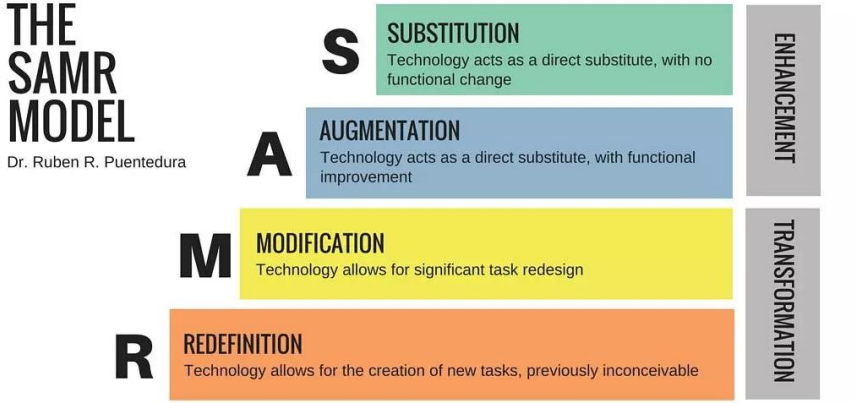
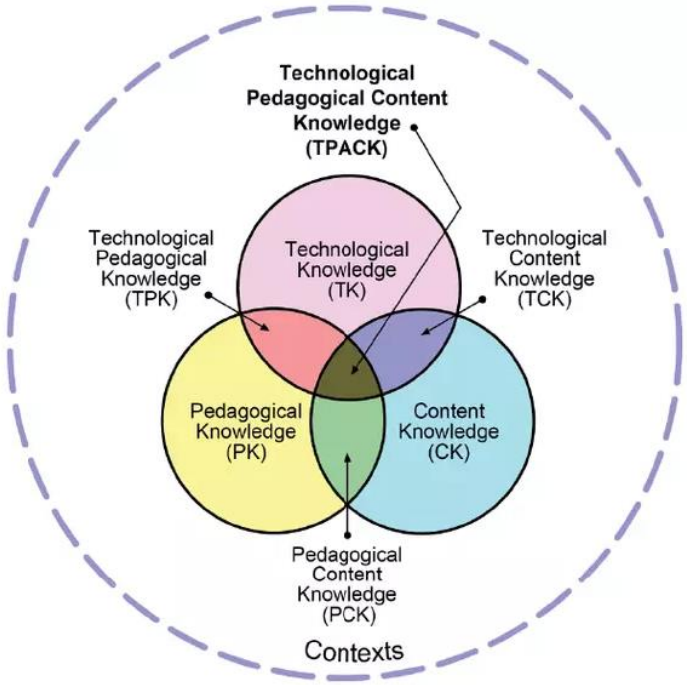
The Metaverse



Some Models



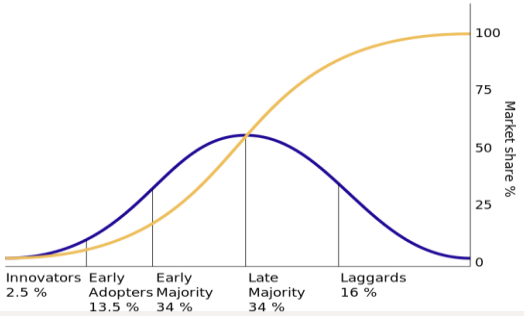


https://taylorinstitute.ucalgary.ca/resources/SAMR-TPACK

Three Approaches

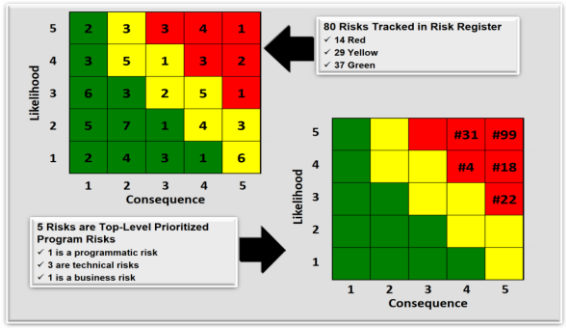
Technology Acceptance

- Roger's Innovation Diffusion Theory
- Theory of Planned Behaviour
- Technology Acceptance Model (Attitudes)
- Concerns-Based Adoption Model (Complex social factors)



Risk Management

- Fine-Kinney Method (exposure, likelihood, consequence)
- Risk Matrix
- Analytical Hierarchy Process Model



Validation Protocols

- Content validity (coverage)
- Construct validity (independence)
- Criterion validity (indicators)
- Test-Retest Validity
- Internal Consistency

Risk Registry

Technology	Process	Administration	Environment	Faculty
Access Reliability Complexity	Management Support Prof. Development	Control Support Compensation	Org. Change Tensions Legal Issues Effectiveness	Effective Use Resistance to Change Self-efficacy Perceptions Prof. Development

Reid, 2014

Wait...

What do we mean by “fail”?

Hersheys, 1996: leadership reduced the timeline for the rollout Implementation team cut down on testing. $100 million worth of orders were unfulfilled.

Hewlett-Packard, 2003: new ERP wasn’t configured to sync with their old systems, as much as 20% of customer orders for servers were left unfulfilled. Cost: $160 million.

MillerCoors, 2013: $100 million project dragged on for three years without an end in sight. The company terminated its implementation partner and filed a lawsuit against them.

Revlon, 2018: Revlon lost over $64 million in unshipped orders, suffered a 6.9% drop in its stock price, and got sued by its investors.

All quoted or paraphrased from Rohn, 2022

Wait...

But there are more kinds of failure

Microsoft Zune: the personal MP3 player never caught on

Sony Betamax: JVC's product was lighter (29 pounds vs. 36 pounds), had a longer recording capacity, and was cheaper

Blackberry Storm: its interface was nearly impossible to use, it had connectivity issues, and it was too expensive

Theranos: was apparently manipulating its lab and pushing its products to market before they actually worked

Merck's Vioxx: increased risk of cardiovascular events such as strokes and heart attacks; they settled for $4.85 billion in damages

Ford Pinto: impact would rupture the fuel tank and risk making the car explode

McDonald's McDLT: extraordinarily wasteful packaging to "keep the hot side hot, and the cool side cool"

Google Glass: expensive, and never got past the dorkiness factor

All quoted or paraphrased from Livescault, 2014

The Lesson

Failure doesn't just mean "people are not using the technology"

When people don't use a new technology, there's often a very good reason

Sometimes, people use the technology when they really shouldn't have

Here's how

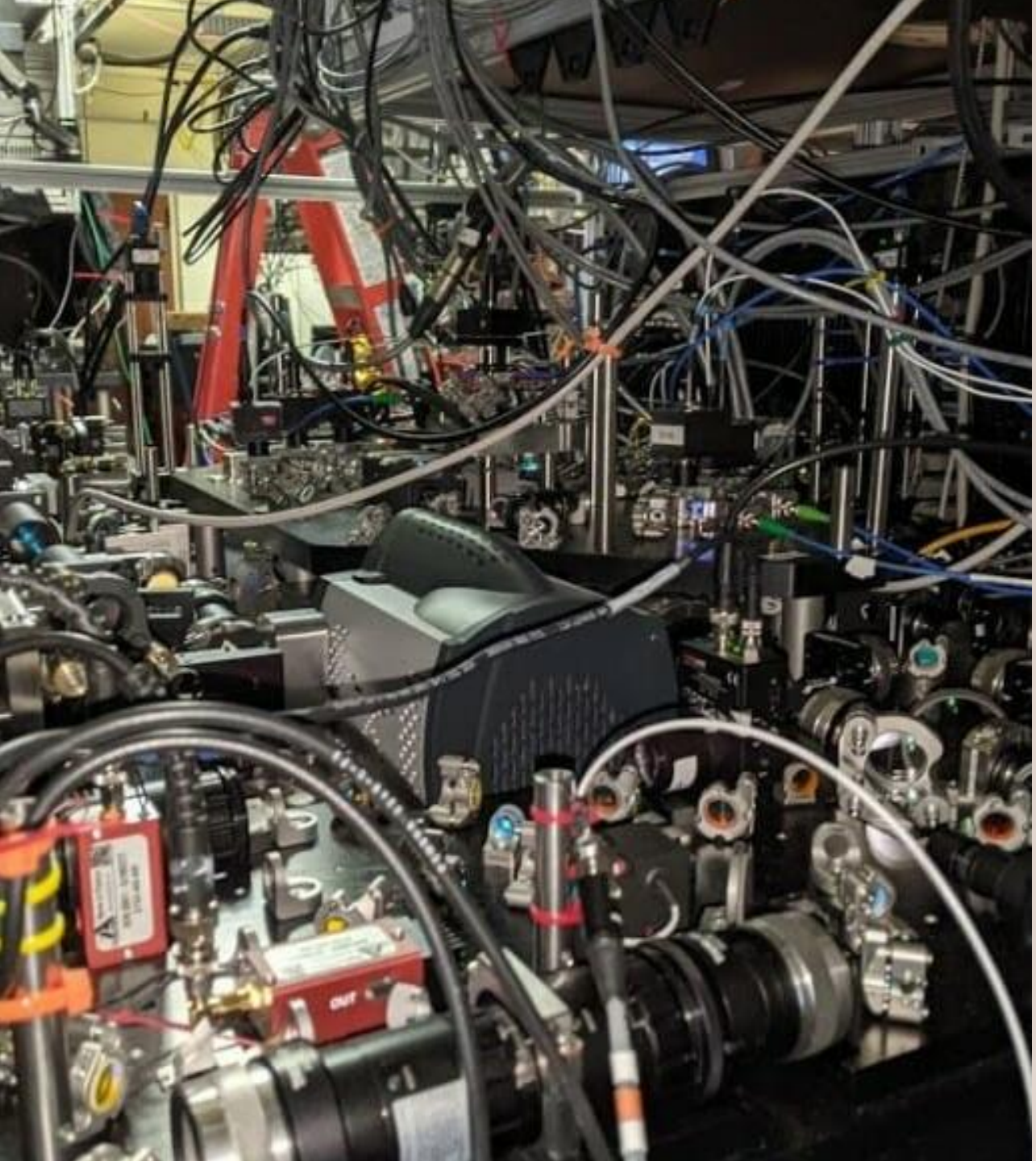
New Technology

will fail (my version)

“We are in a new era, one in which we are building systems that can’t be grasped in their totality or held in the mind of a single person.”

“We’ll need interpreters of what’s going on in these systems, a bit like TV meteorologists”– Samuel Arbesman

nobody knows what the new tech does

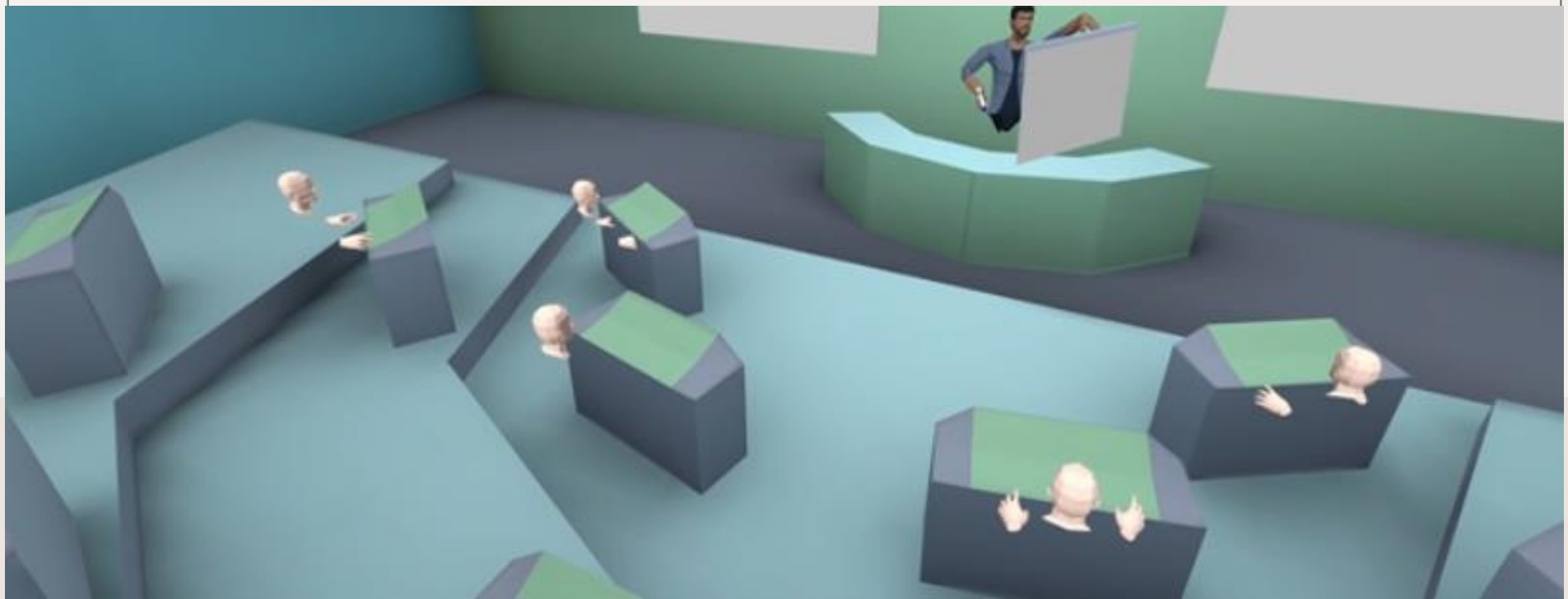


the new tech is harder to use than the old tech

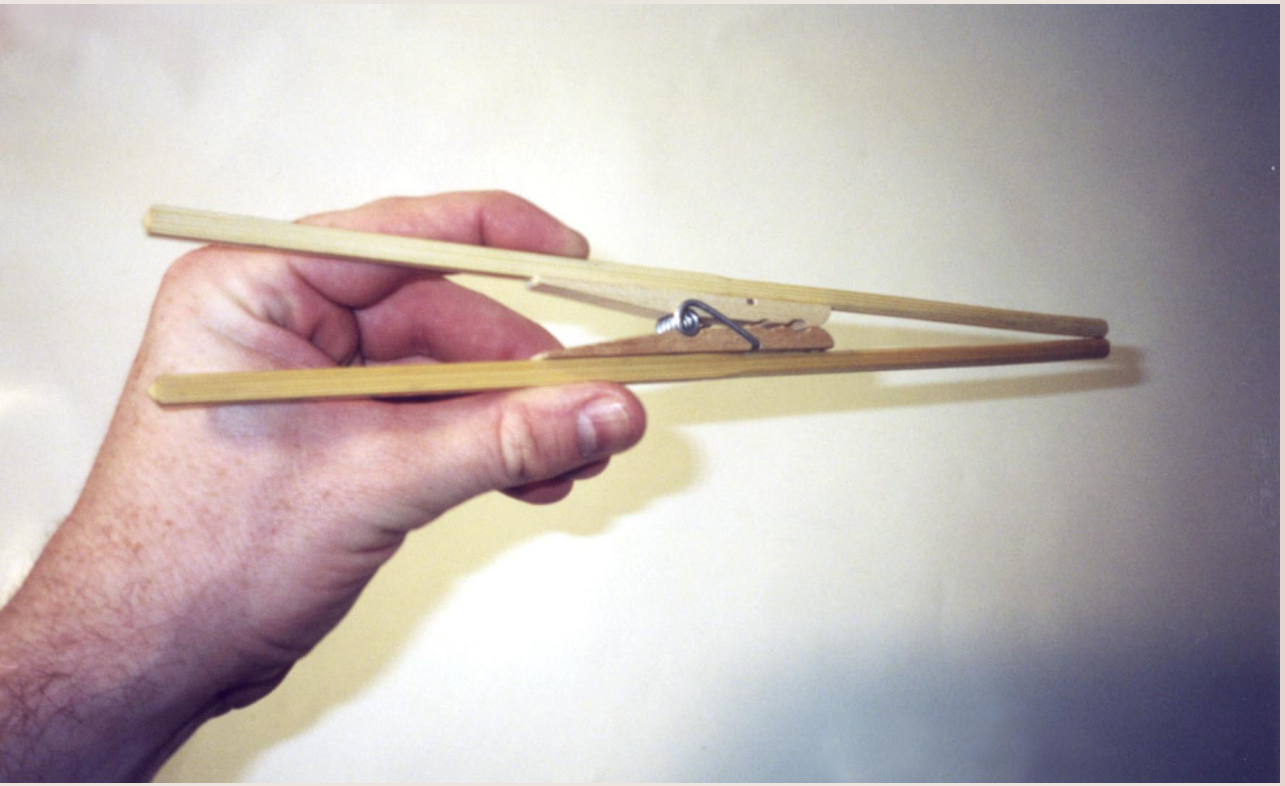
(and/or is badly designed, or can’t be learned just by using it, etc.)

the new tech is used to do the exact same thing as the old tech

which the old tech did fine, but takes longer and adds extra steps



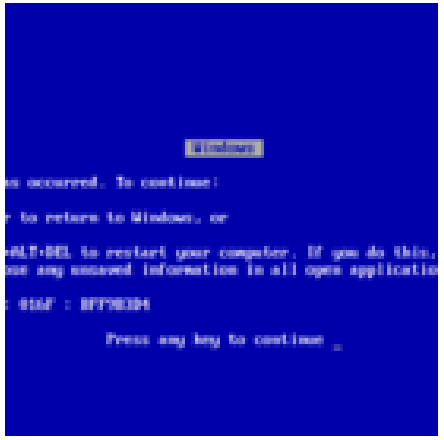
other unexpected side-effects



chindogu.com

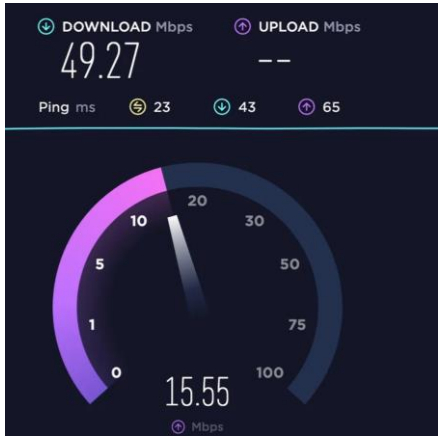
the new tech doesn't address actual needs

the new tech is unreliable and glitchy



Blue Screen of Death

Zip Disc Click of Death



Bandwidth and slow internet

https://www.youtube.com/playlist?list=PLeBQHgzQN9x3Ef-JuV-HQw2on-_RkjTBM

the new tech was a lot more expensive and had to be rationed or partially deployed

(which means it went to executives and managers and not the people who needed it)

the new tech was creepy and tracked everyone's every move

Causes?

- no consultation done with the people who would use the new tech
- the new tech wasn't piloted long enough before being put into production
- no marketing or introduction to help people use the new tech in new ways
- a risk assessment was not conducted
- proper budgeting and ongoing investment was not done
- business processes never adapted to match the capabilities of the new tech
- a culture of trust was never established

Not Why Transformation Fails

Staff and Students

- resistance to change
- fear of losing our jobs
- speed of change or rapid change

Human Resources

- lack of training and/or inability to learn
- not having the right talent
- insufficient leadership and/or buy-in from the corner suite

Psychology

- not having the right mindset
- failure to innovate

One Final Note

Let me give you an example of how I view this. Probably the most transformative technology in the workplace over the last decade or so has been the Android/iPhone. It's like we looked up one day and everybody in the workplace had one. How did this happen? Think about it:

- we paid for them ourselves
- we trained ourselves (if we needed training on them at all, which we mostly didn't)
- they just worked
- they made things a lot easier to do

We know what happened: everybody went out and bought one, because having a combination computer-phone-camera-walkman-whatever system in our pockets was too good an opportunity to ignore.

Thank you

xo

Stephen