

Welcome to STKI Summit 2024



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Agenda

Introduction

Building a Generation-Defining IT Department

Mapping Technological Change

Inflection Points


Tipping Points

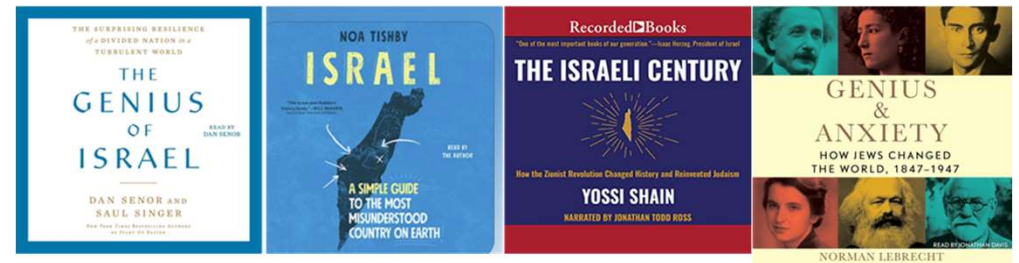
Strategic Value Creation by CIO Roles

Conclusion



My 2024 reading list

I recommend the following books
(I  most of them)



My 2024 reading list: page 2



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Quotes from the books that I find important



“The purpose of an **organization is to enable ordinary human beings to do extraordinary things.**” Peter Drucker

“As information becomes more plentiful, attention becomes scarcer. **Attention is a prerequisite to clarity.**” Herbert Simon

“Organizations that design systems (including products and services) are constrained to **produce designs that are a copy of the communication patterns within the organization.**” Melvin Conway

“AI is the new electricity. Just as electricity transformed almost everything 100 years ago, today I actually have a **hard time thinking of an industry that I don't think AI will transform** in the next several years.” Andrew Ng

“The world is being re-shaped by the convergence of social, mobile, cloud, big data, community, and other powerful forces. The **convergence of these technologies unlocks an incredible opportunity dramatically transforming the way we live and work.**” Marc Benioff



Managing Partner of STKI

Involved in:

- IT Strategy
- Innovation
- New Technologies



Ship of Theseus



Greek hero **Theseus** returns triumphantly to Athens after he slayed a child-eating minotaur.

Theseus's ship was kept in the Athenian harbor to honor his bravery,

For centuries, **maintained by Athenians through systematic replacement of old planks with new**, stronger planks.

Eventually, **all the original planks were replaced**.

Is it still the Ship of Theseus?

IT department '2025-26'



Just like the Ship of Theseus, the IT department undergoes continuous changes and updates.

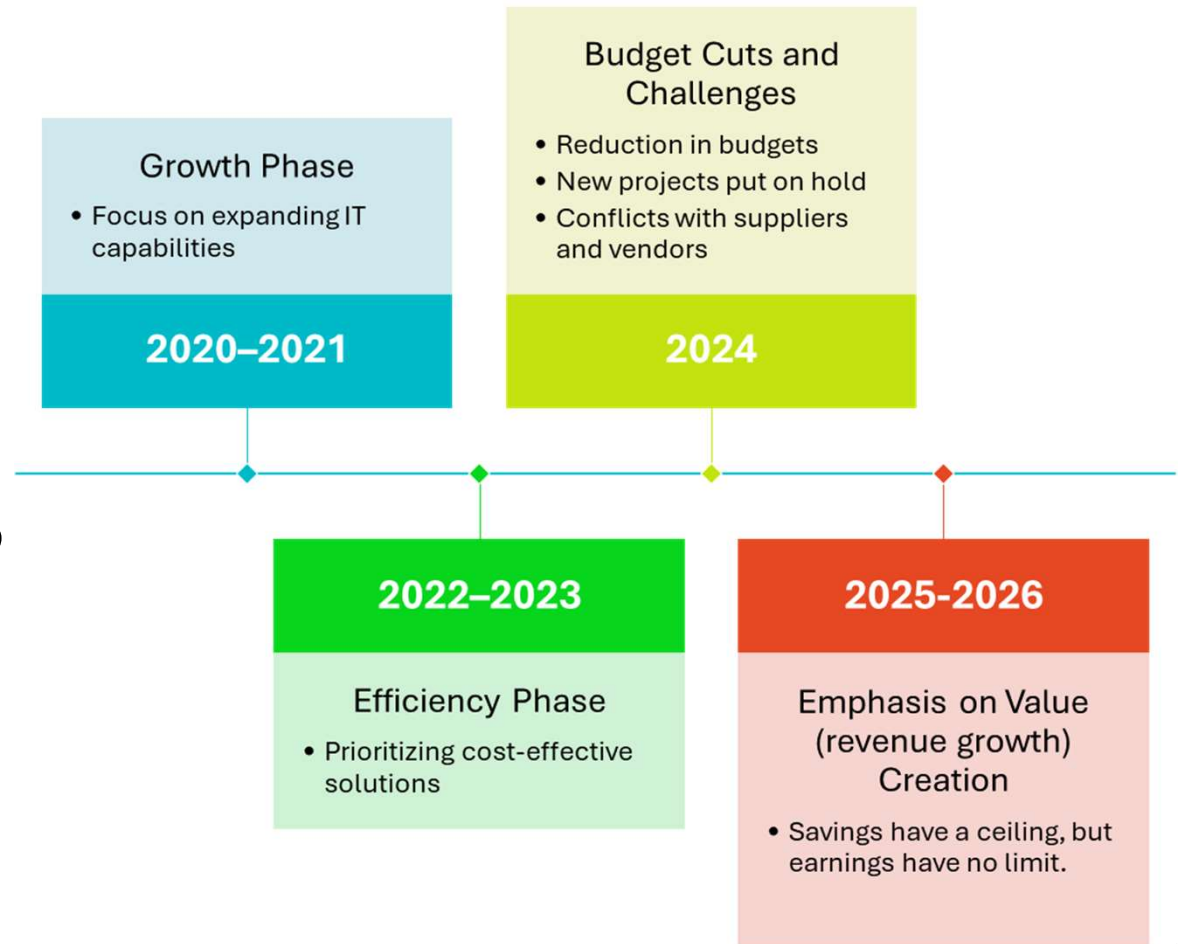
Old systems, software, and hardware are systematically replaced with new, more efficient ones.

Does the purpose of the IT department persist, even as its individual parts are renewed?

Despite these changes, are the core functions and objectives of the IT department the same?

Is the IT department still the same if all its components have been replaced over time?

Recent Cycles in Israeli IT Departments



- על מנת לשפר את הרווחיות של כל חברה אתה יכול להגדיל את ההכנסות ולאו לצמצם את ההוצאות.
- אני כמנכ"ל נותן עדיפות לטיפול בצד ההכנסות על פני ההוצאות** וזאת מהסיבות הבאות:
- לשיפור בהכנסות יש אפקט מדבק של מוטיבציה כאשר צמצום מלווה בכעס ובמרמר
 - לשיפור בהכנסות אין גבול והוא יכול להתמשך במיוחד אם הוא מלווה במציאת אוקיאנוס כחול ולעומתו לצמצום בהוצאות יש רצפה שלא ניתן לרדת ממנה ולא ניתן להמשיכו באופן בלתי מוגבל
 - השיפור בהכנסות יש בו תעוזה, מקוריות, חשיבה מתמדת ומנגד הצמצום בהוצאות לרוב מתבצע בצורה טכנוקרטית
 - לצמצום בהוצאות עלול להתלוות גם קיטון מקביל של הכנסות.
 - ועם כל האמור לעיל אין זה אומר שאין מה לטפל בצד ההוצאות כלל. **זו רק הגדרת סדרי העדיפות בתשומת הלב**

ניסן לוי
מנכ"ל



How do we ensure after years of challenges, pivots and modifications that we don't lose ourselves in the process?



Our organizations **adapt and change course constantly** which can come in the form of **new technologies or shifting customer expectations**.

IT is **navigating the seas of change**, and seeking an answer to:

- What comes next?
- How to build a generation-defining IT department?
- How to leave a lasting legacy?

Building a 'new' Generation-Defining IT Department



1. Proactive & Predictive:

- **Traditional:** Reacts to problems and requests.
- **New:** *Uses data and AI to anticipate issues before they impact users and the business..*

2. Cloud-Forward:

- **Traditional:** Focused on on-premise hardware and software.
- **New:** *Embraces cloud solutions (public, private, hybrid) including cloud-native applications, serverless computing, and cloud storage.*

3. Automation-Driven:

- **Traditional:** Relies heavily on manual processes.
- **New:** *Automates repetitive tasks like software deployment, user provisioning, and system updates.*

4. Customer-Centric:

- **Traditional:** Views users as just "users."
- **New:** *Treats employees and customers (equally) with self-service portals, personalized support, and user-friendly interfaces prioritizing their needs and experiences.*

5. Security-Obsessed:

- **Traditional:** Focuses on perimeter security.
- **New:** *Adopts a zero-trust approach, assuming no user or device is inherently trustworthy..*

Building a 'new' Generation-Defining IT Department (2)



6. Data-Driven:

- **Traditional:** Collects data but may not utilize it effectively.
- **New:** *Leverages data analytics to gain insights* into IT performance, user behavior, and security threats..

7. Agile & Innovative:

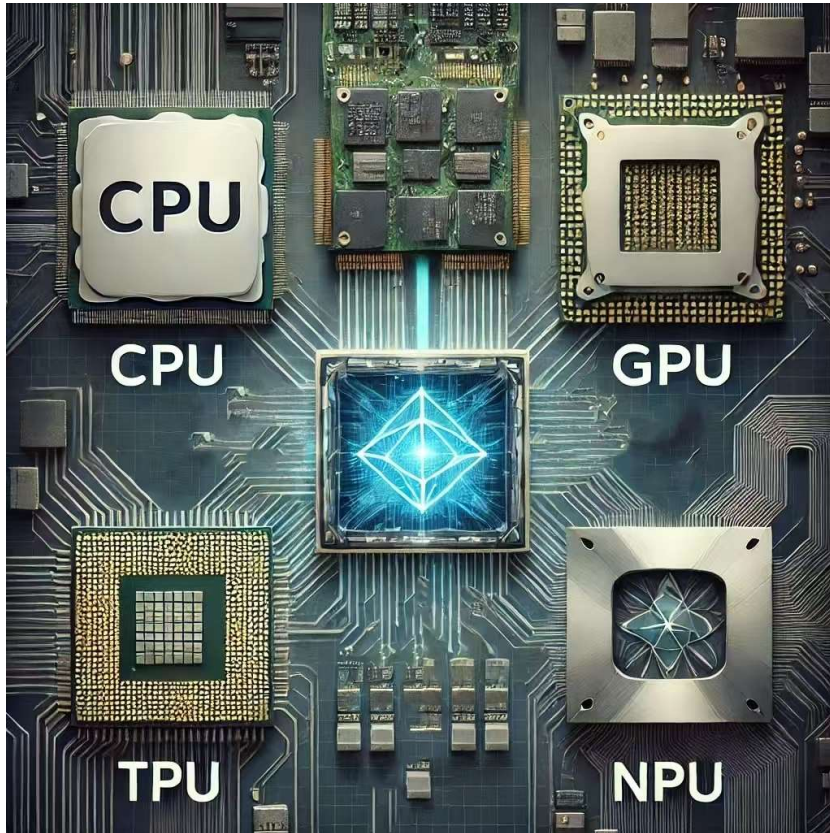
- **Traditional:** Follows rigid processes and waterfall methodologies.
- **New:** *Embraces agile methodologies and DevOps* practices for faster development and deployment of applications and services.

8. Business-Aligned:

- **Traditional:** Operates in a silo, separate from the business.
- **New:** *Acts as a strategic partner to the business*, understanding its goals and objectives and aligning IT initiatives accordingly.

9. Talent-Focused:

- **Traditional:** May struggle to attract and retain top talent.
- **New:** *Invests in employee development and creates a culture of learning, in order to retain skilled IT professionals*



Even PCs are now different :

They have many types of specialized processors with different purposes

- **CPU (Central Processing Unit):** Handles all logic, calculations, and input/output of the computer. It is a general-purpose processor.
- **GPU (Graphics Processing Unit):** Enhances the graphics interface and runs high-end tasks.
- **TPU (Tensor Processing Unit):** Specifically designed for machine learning and neural network workloads.
- **NPU (Neural Processing Unit):** Also designed for AI and machine learning tasks, often found in mobile devices.

Inflection Points

Inflection Point

- Moment of significant change in technology or market trend

Shift in Growth Rate

- Technology **gains some acceptance** and adoption

Causes of Change

- Technological advancements
- Changes in consumer behavior
- Market dynamics

Impact on Growth Curve

- Direction changes **from slow growth to incremental growth**



Tipping Points

Definition of Tipping Point

- Moment when technology/product **surpasses critical threshold**
- **Threshold often around 33%**

Market Shift

- Technology moves from early adopters to mainstream

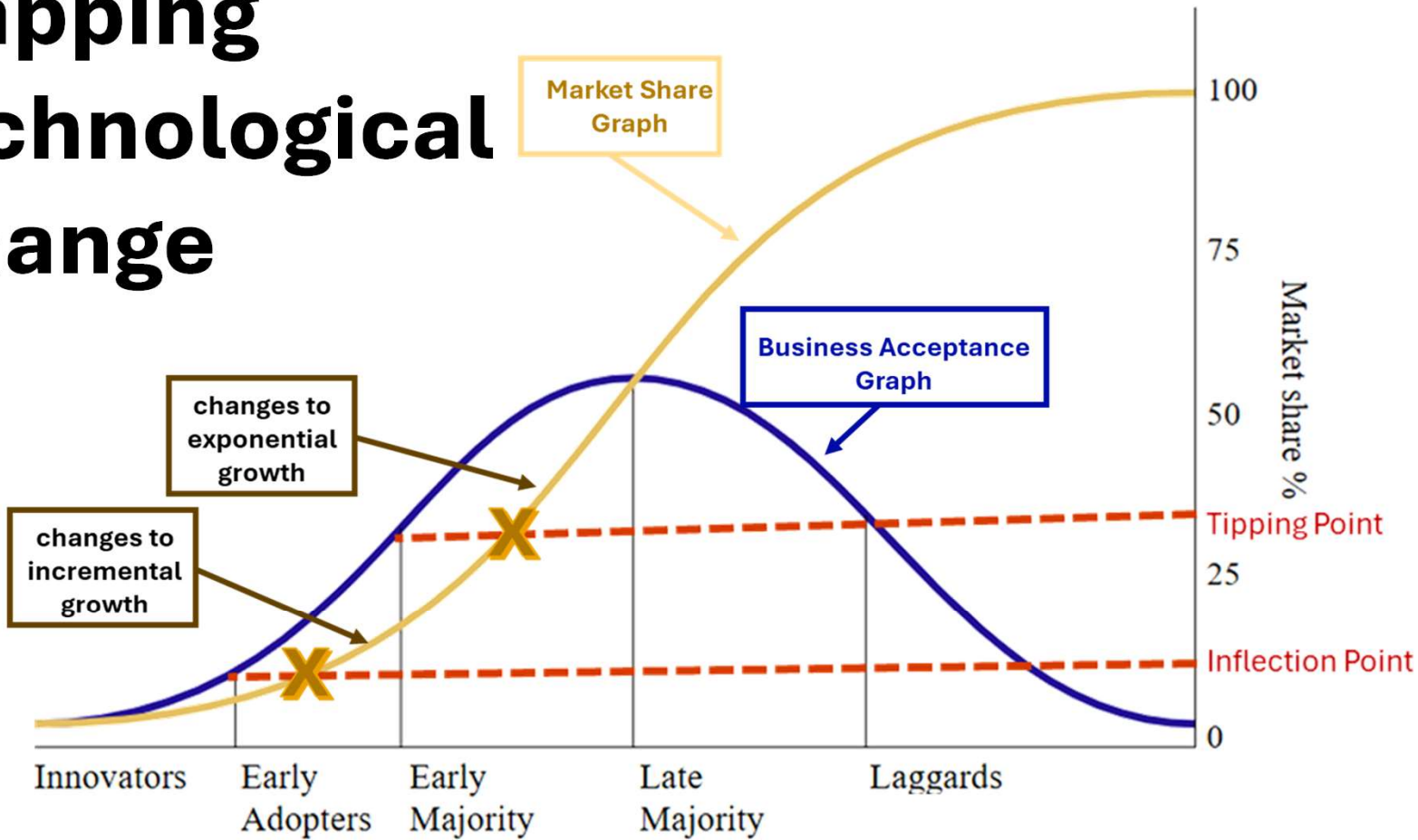
Widespread Acceptance

- Technology becomes widely accepted
- **Adoption rate increases** significantly

Market Impact

- Rapid and widespread change in market landscape
- Direction changes **from incremental growth to exponential growth**

Mapping Technological Change



Tipping Point

Occurs when critical mass of adoption is reached
Leads to widespread acceptance
Results in market transformation



Inflection Point

Represents a change in the growth rate

Some “new-old” technologies



Artificial Intelligence

- Automation
- AI Agents
- AI coding tools
- powerful AI

Metaverse

- Virtual Reality (VR)
- Augmented Reality (AR)

Blockchain

- Decentralized Finance (DeFi):
- Non-Fungible Tokens (NFTs)

Cloud computing

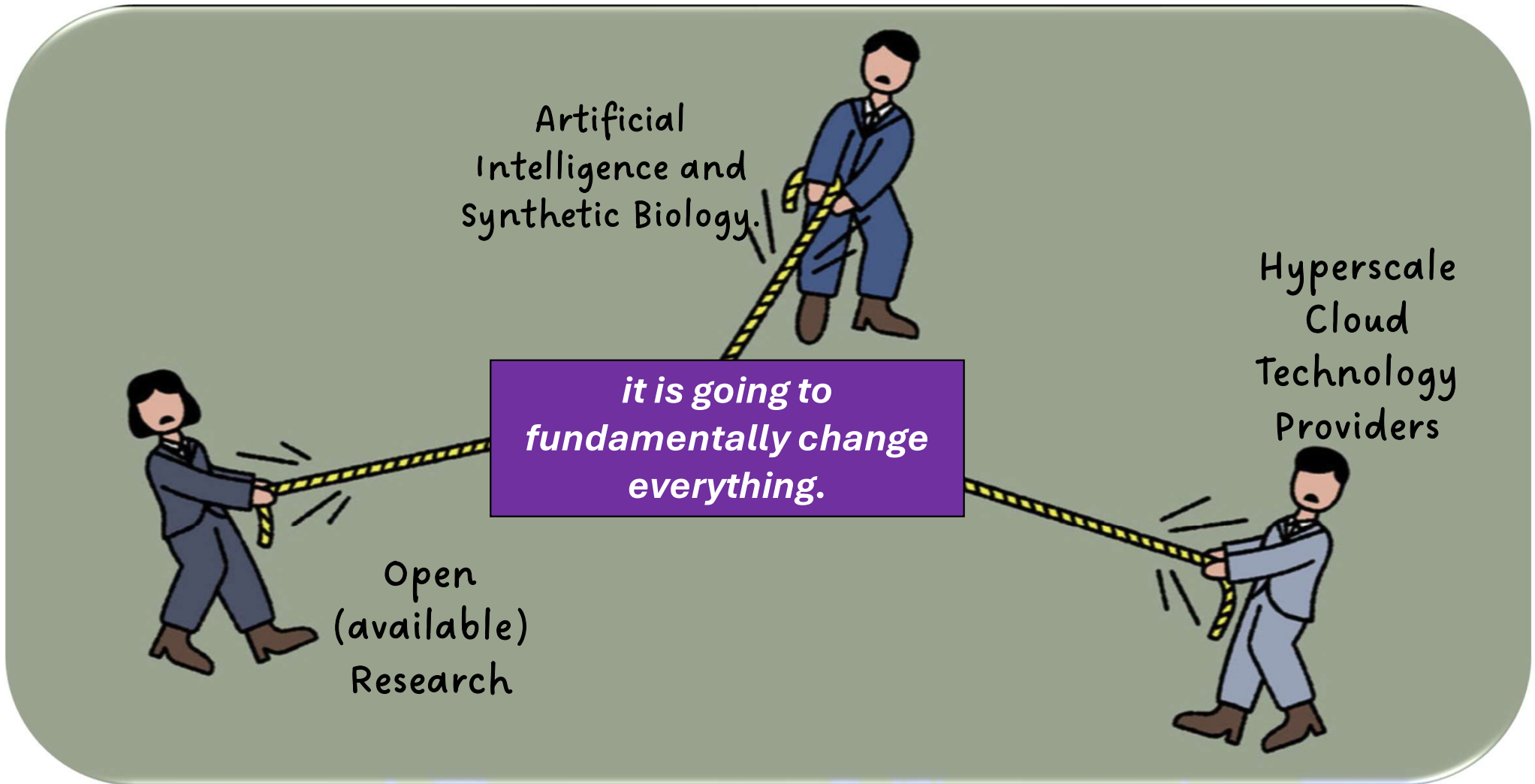
- Hybrid and Multi-Cloud Environments
- Edge Computing Integration
- AI and Machine Learning Integration
- Serverless Computing
- Quantum Computing Integration

Video conferencing

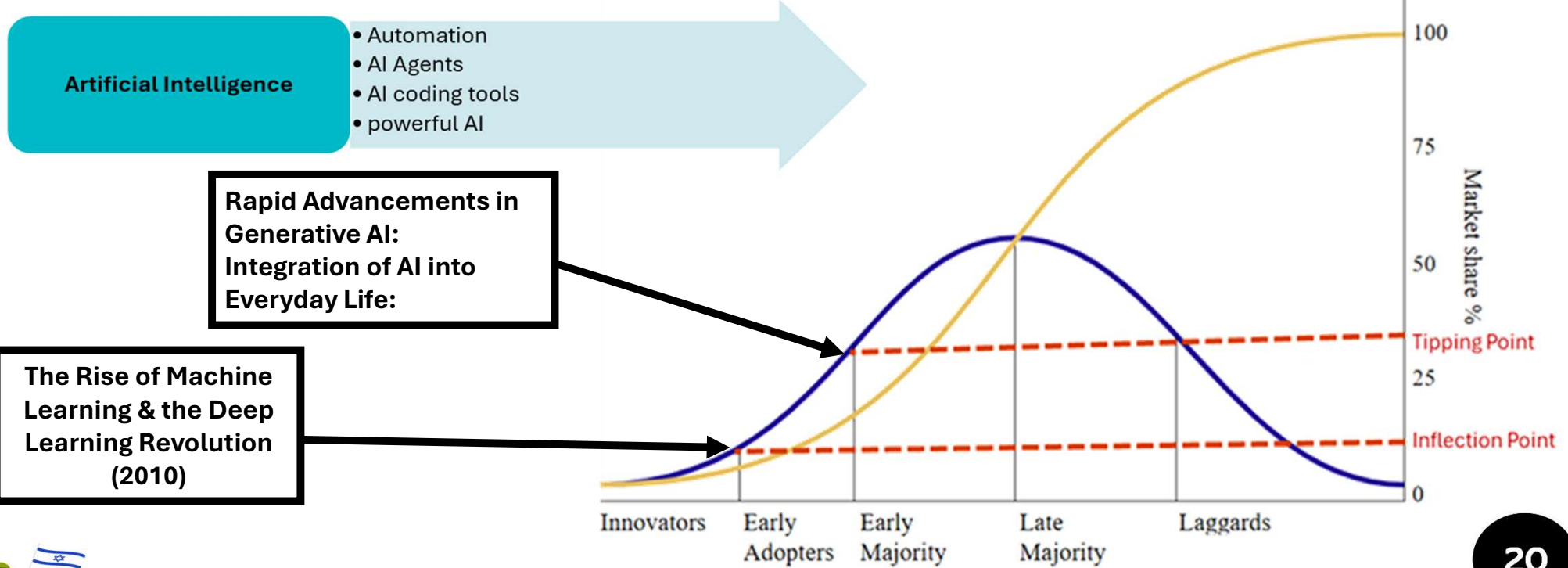
Individuals & enterprises

Listening Culture

Inside and outside the company



Artificial Intelligence (AI)



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The three waves of AI



1. The first wave was **predictive AI**, This wave enabled businesses to forecast trends and make data-driven decisions.
2. The second wave brought us **generative AI**, which is the ability to "generate content and allow conversations with humans."
3. Now, we're entering the third wave, **agentic AI**, where AI systems can autonomously execute tasks and interact with other AI agents
 1. Imagine a future where **AI agents augment human capabilities**, with humans taking on roles that coordinate and manage teams of AI agents.
 2. This transformation is already making **new positions** like AI agent trainers, AI workflow orchestrators, and AI ethics compliance officers.

"I want AI to do my laundry and dishes so that I can do art and writing, not for AI to do my art and writing so that I can do my laundry and dishes."

Author and videogame enthusiast Joanna M...



Don't worry because AI agent is here

Laundry-Folding Robots Are Finally Here



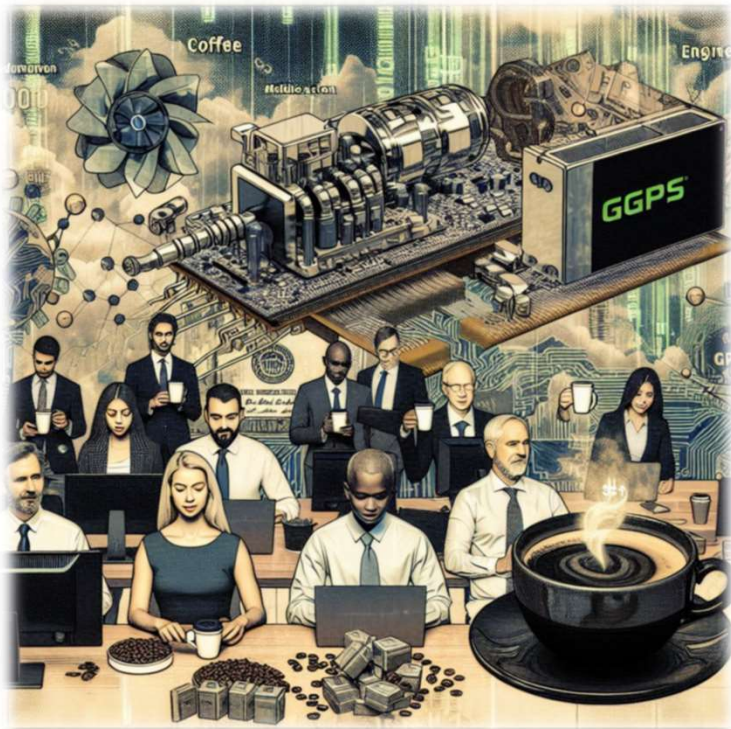
Physical Intelligence

*trains robots on models that combine **large language models (LLMs)** with specific task datasets collected from robots.*

October 2024, it unveiled a **general-purpose robot foundation model** called **pi-zero** that managed to successfully train robots to **unload laundry, bus tables, place food in to-go containers and assemble cardboard boxes.**



The New AI Workforce



AI agents are **essentially digital assistants** (on steroids) that can act autonomously to achieve specific goals.

- These AI agents can:
 - Understand and interpret complex goals:
 - Plan and execute actions:
 - Learn and adapt:
 - Interact with their environment:

We are witnessing the greatest transformation in history.

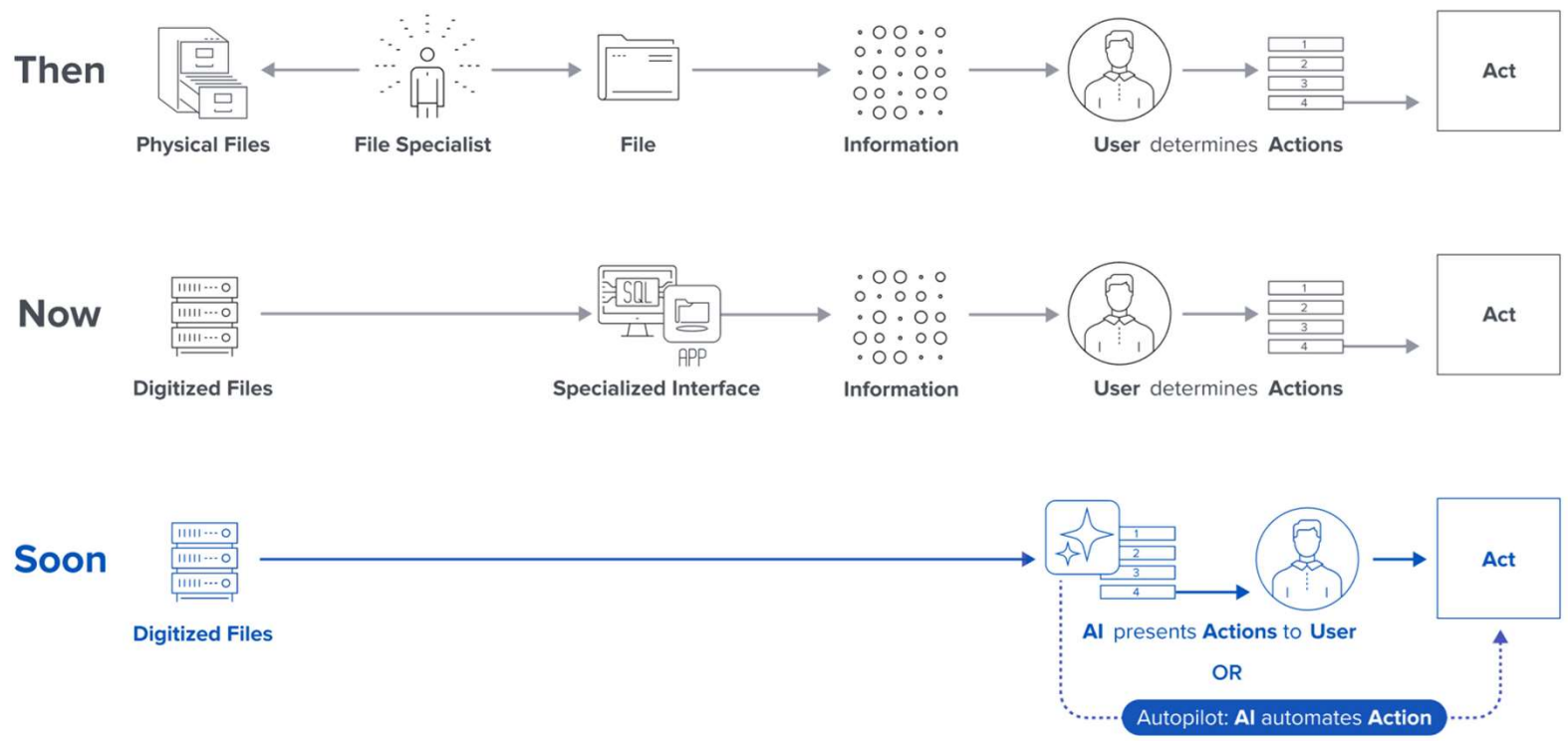
Software becomes labor.

It's the new E=MC2.

**Capital buys coffee, engineers, and GPUs.
Out comes code that takes the role of labor.**

Capital → GPUs + ^{coffee}Engineers → Software → Labor

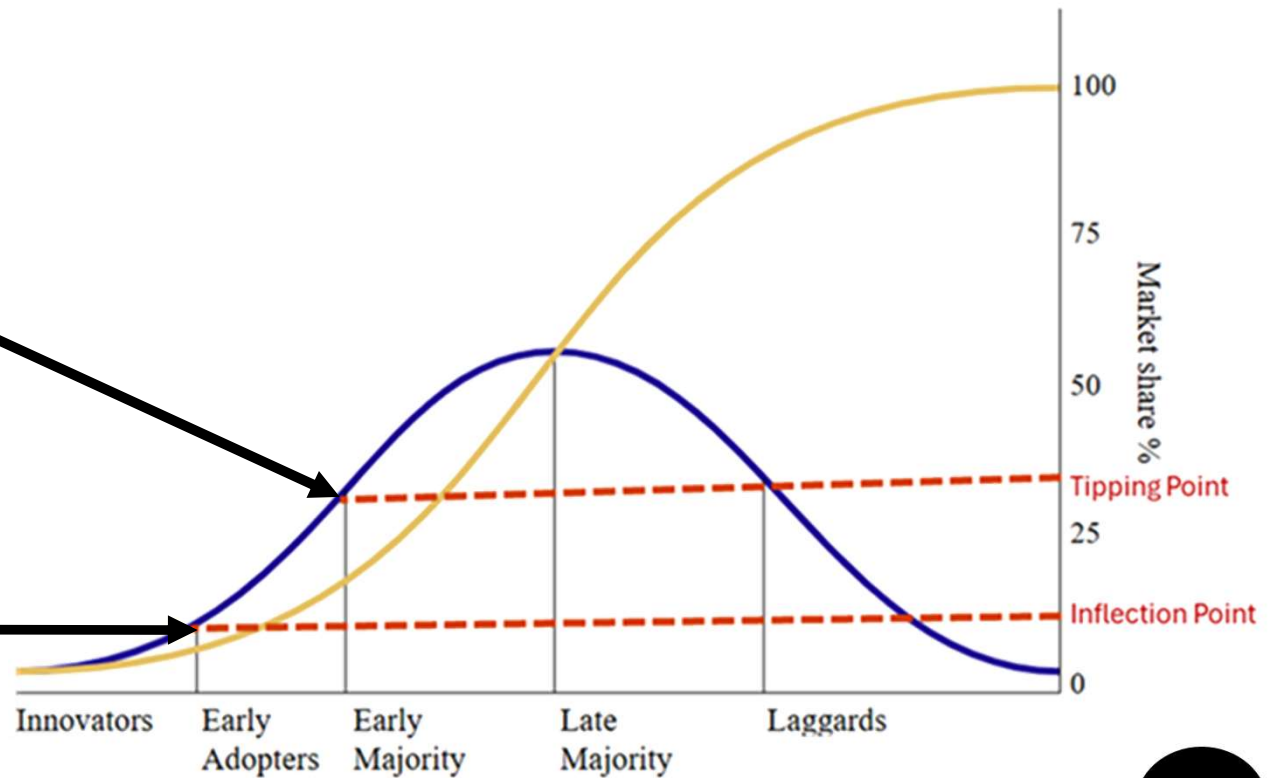
Physical



AI agent revolution (agentic AI)

Next 5-10 years
will see increased automation of tasks; personalized AI assistants integrated in our lives; early signs of autonomy

2017 Google,
open sourced
TRANSFORMERS(AI
algorithm that understand
the underlying structure)

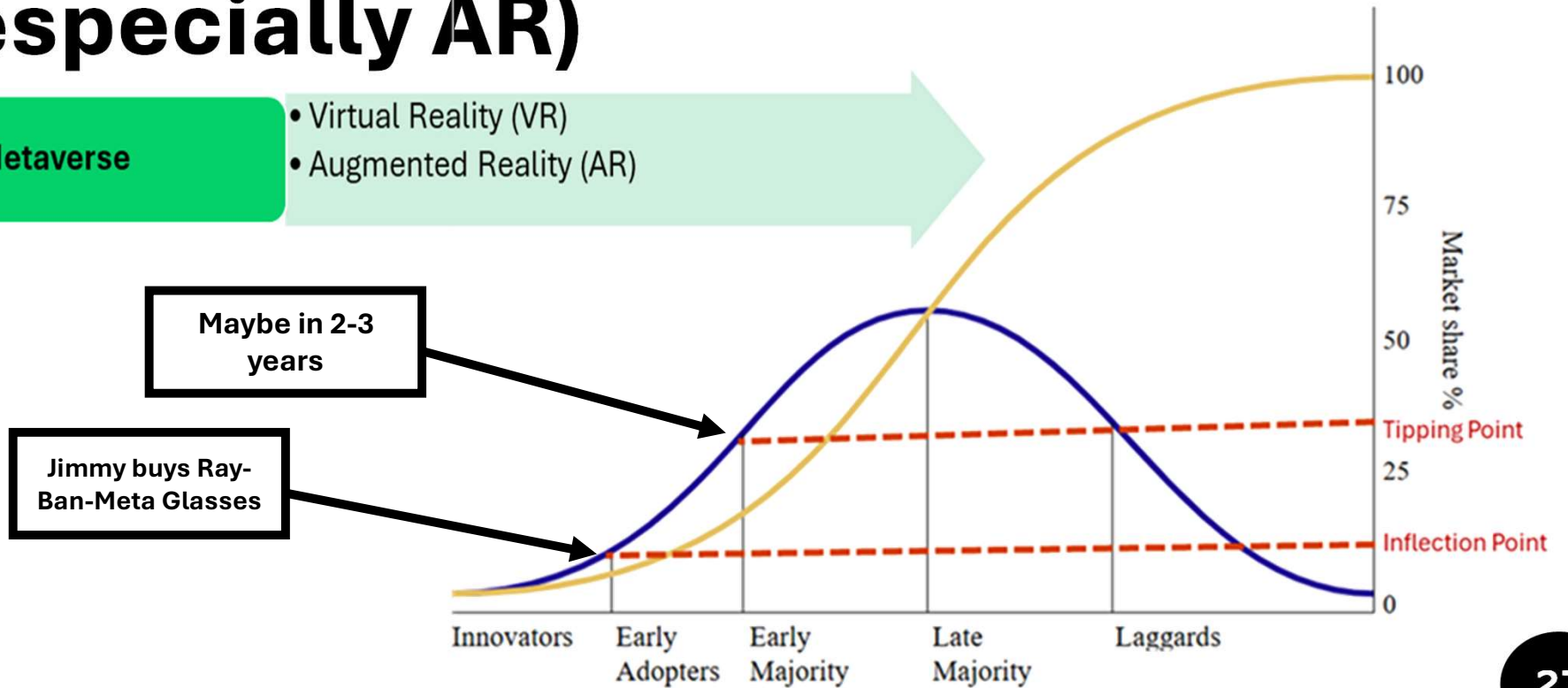


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Metaverse (especially AR)

Metaverse

- Virtual Reality (VR)
- Augmented Reality (AR)



Factors Driving AR Towards the Tipping Point:



Meta AI*

Use your voice to learn something new, simplify everyday tasks or translate languages on-the-go.

RAY-BAN | META WAYFARER

Capture

Call

Listen

Livestream



Swarovski Optik's AX Visio binoculars use image-recognition algorithms and GPS data to discern the species of whatever bird you point them at.

Technological Advancements:

- Improved Hardware
- Software Development
- 5G Connectivity.

Increased Accessibility and Affordability:

- Smartphone Penetration
- Lowering Costs

Growing Content and Applications:

- **Gaming and Entertainment:** AR games like Pokémon Go
- **Practical Applications:**
 - **Retail:** Virtual try-on experiences, interactive product demonstrations.
 - **Healthcare:** Surgical visualization, patient education, remote diagnostics.
 - **Education:** Interactive learning experiences, 3D visualizations.
 - **Manufacturing:** Assembly instructions, equipment maintenance, remote collaboration.

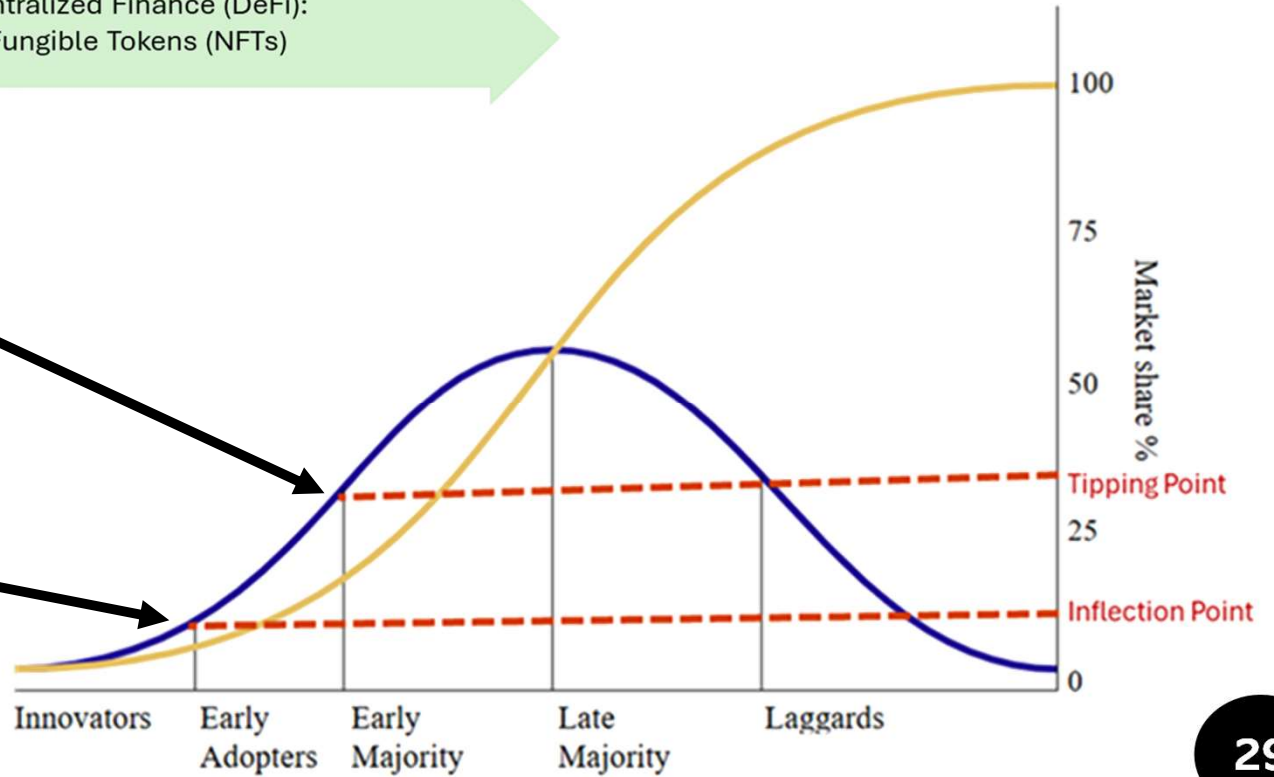
Blockchain

Blockchain

- Decentralized Finance (DeFi):
- Non-Fungible Tokens (NFTs)

will likely be a gradual process, with different industries adopting it at varying paces

The Breakthrough: Bitcoin



Challenges to Overcome Before Reaching the Tipping



Challenges:

Scalability: Some blockchain networks still face challenges in handling a large number of transactions.

Interoperability: Different blockchain platforms need to be able to communicate and interact seamlessly.

Regulation: Clear and consistent regulations are needed to foster innovation and protect users.

Complexity: Blockchain technology can be complex to understand and implement, requiring specialized skills.

Public Perception: The association of blockchain with volatile cryptocurrencies can create uncertainty and skepticism.

Good Signs :

Increased Investment: VC investment is surging.

Industry Collaborations: Consortia and partnerships are forming to develop industry-specific solutions.

Real-World Applications: Projects in various sectors, from supply chain to healthcare to voting systems.

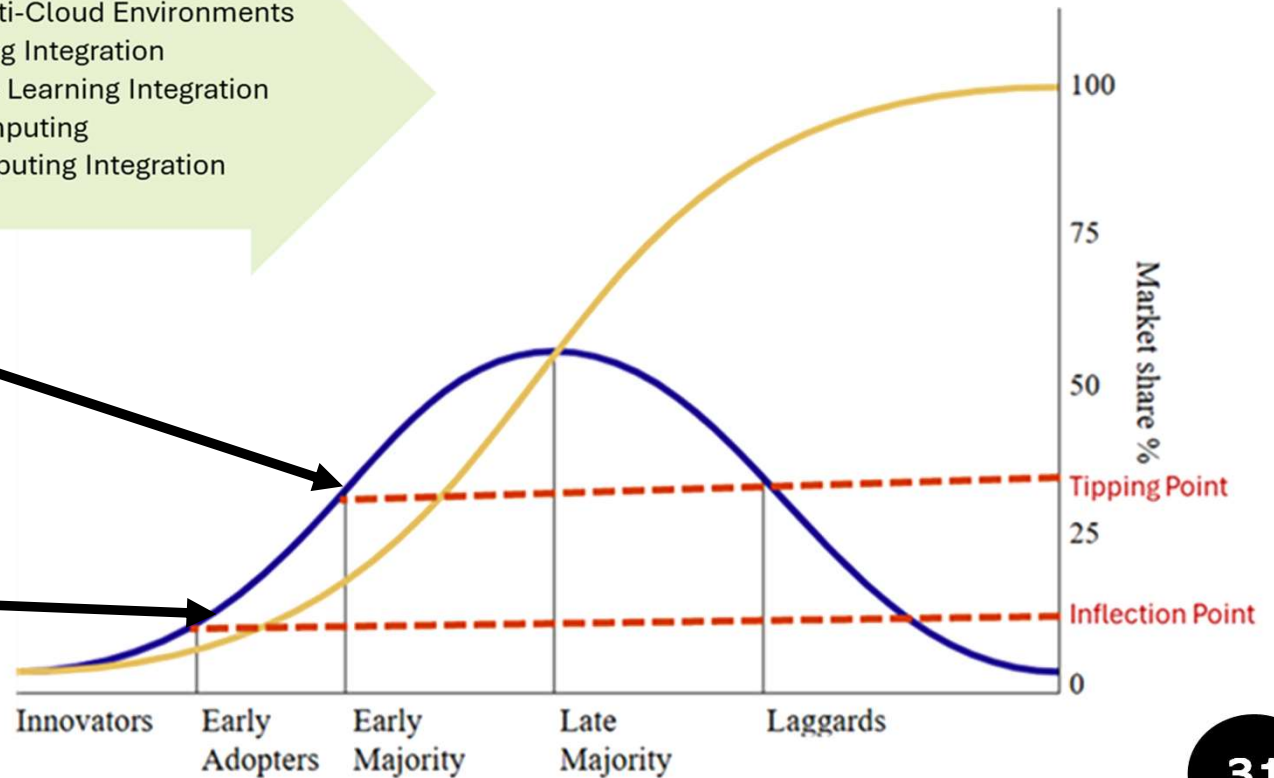
Cloud Computing

Cloud computing

- Hybrid and Multi-Cloud Environments
- Edge Computing Integration
- AI and Machine Learning Integration
- Serverless Computing
- Quantum Computing Integration

- Over 33% of companies increased scope and volume of cloud initiatives
- Surge in government IT cloud commitment over the past two years

- NIMBUS
- Hyperscale data centers in Israel (international & local)
- Level 5 SaaS Marketplace



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Cloud Computing



Promising Trends:

- Hybrid and Multi-Cloud Dominance
- Serverless Computing Takes Center Stage:
- Edge Computing Expands:
- AI and Machine Learning Integration:

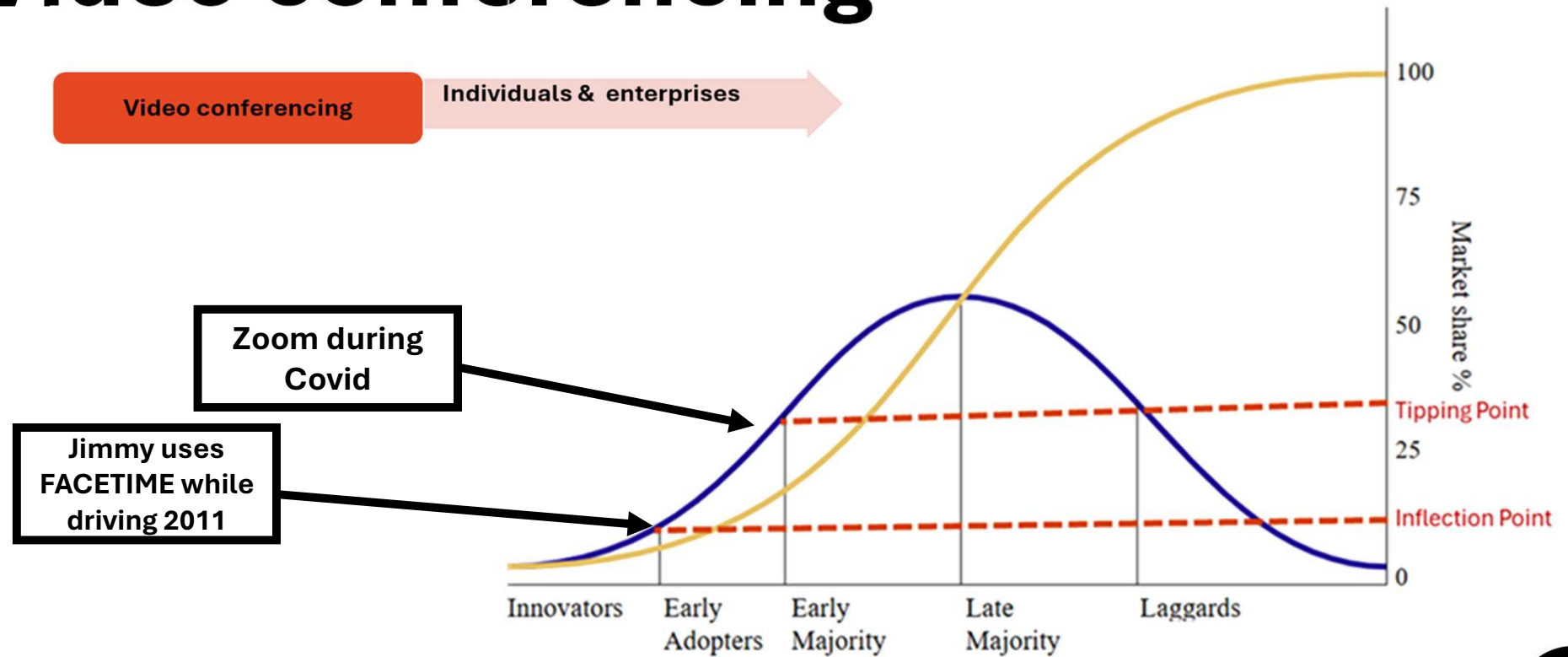
Challenges and Concerns:

- **Security Concerns:**
 - Data Breaches
 - Shared Responsibility Model
 - Vendor Lock-in
- **Cost Management:**
 - Unpredictable Costs
 - Hidden Costs

Navigating the Future:

- **Strategic Planning:** Developing a strategy aligned with business goals.
- **Security-First Approach:** Prioritizing security
- **Cost Optimization:** Managing and optimizing costs.
- **Talent Development:** Investing in cloud skills and expertise.
- **Staying Informed:** Keeping up with the latest trends and best practices

Video conferencing



Video Conferencing Futures



AI-Powered Features:

- transcribe meetings in real-time,
- provide summaries
- analyze sentiment to gauge participant engagement.

AI assistants that

- schedule meetings,
- take notes,
- generate action items.

Interactive Whiteboards and Shared Workspaces:

- seamless brainstorming,
- design thinking,
- co-creation in virtual environments.

Integration with Other Platforms and Devices

- integrated with competing video conferencing tools
- Integrated with other productivity suites

Real-time Translation and Captioning:

- accurate and instantaneous translation features

Listening Culture

shift where truly listening to others becomes the norm, not the exception.

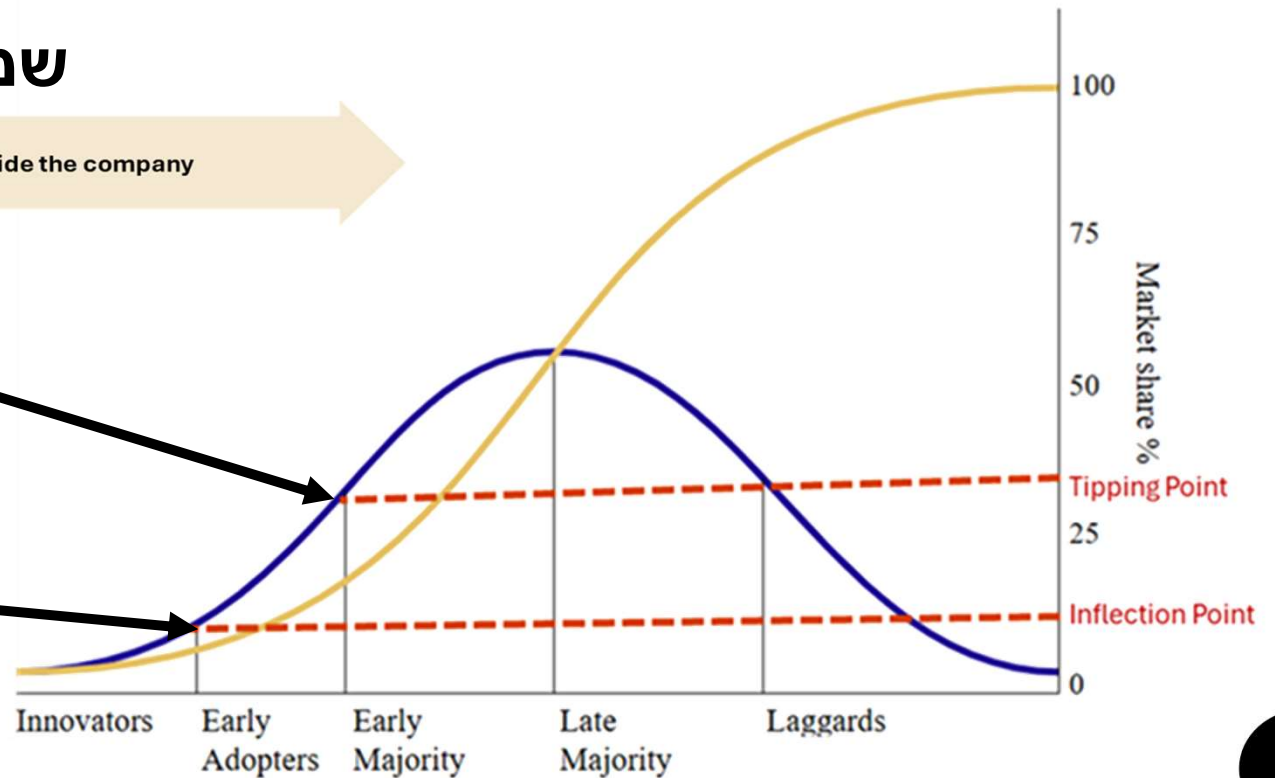
שמיעה מול הקשבה

Listening Culture

Inside and outside the company

Not yet but hoping that we are moving in the right direction

Emphasis on Emotional Intelligence



Driving Forces Towards a Listening Culture Tipping Point



Workplace Dynamics:

- **Employee Engagement:** creating a listening culture leads to higher employee engagement, productivity, and retention.
- **Leadership Styles:** new generation leaders prioritize listening and feedback.
- **Remote Work:** highlighted the importance of clear communication and active listening.

Technological Influences:

- **Social Media:** exposes people to diverse perspectives and encourages dialogue (when used mindfully).
- **Communication Tools:** Platforms like Slack and Microsoft Teams promote active listening, such as threaded conversations and reaction emojis.
- **AI-Powered Transcription and Analysis:** Tools that transcribe and analyze conversations identify patterns and improve communication skills.

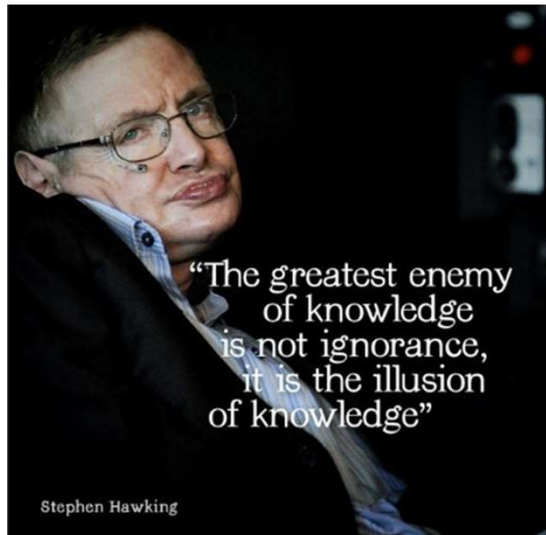
Challenges to Overcome:

- *Information Overload*
- *Short Attention Spans*
- *Ego and Bias*
- *Lack of Training:*

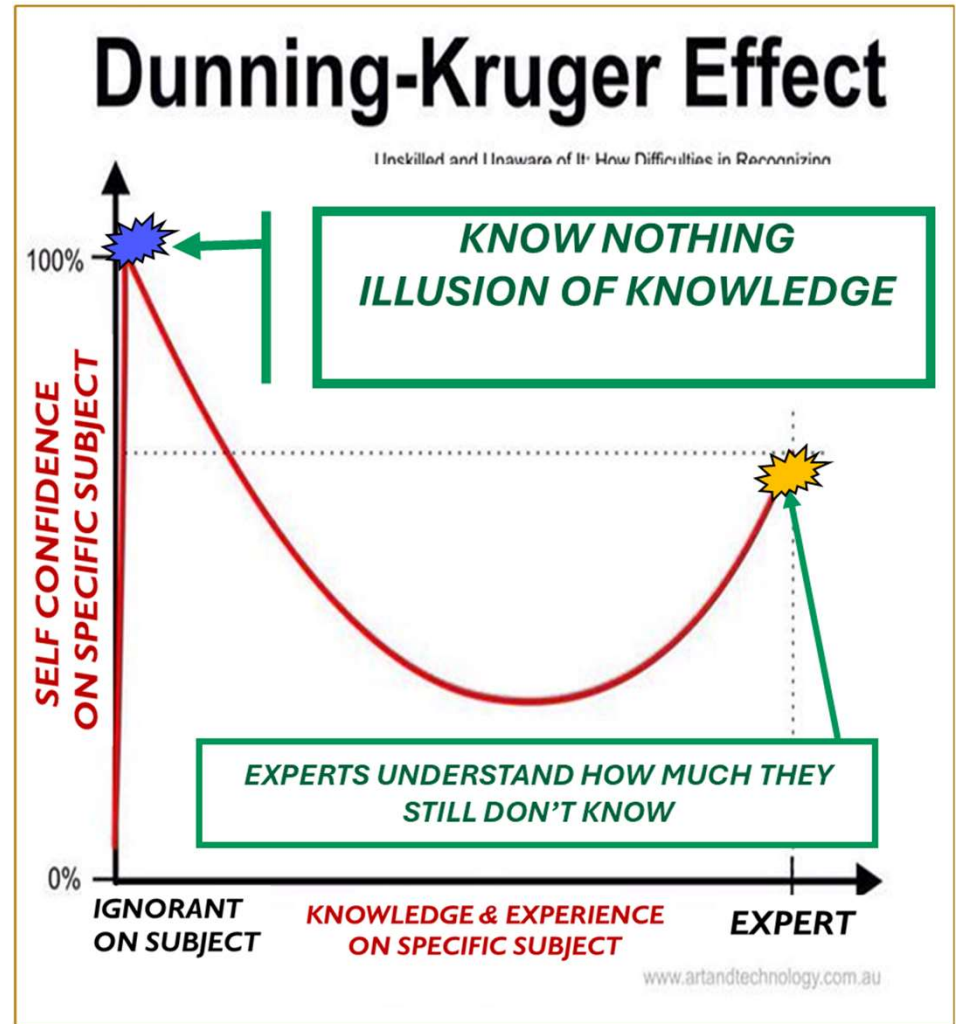
The Dunning-Kruger Effect Shows Why Some People Think They're Great Even When Their Work Is Terrible



Prof. David Dunning



Stephen Hawking



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The role of the CIO is undergoing a dramatic transformation.



No longer just the "chief information officer", no longer just about "keeping the lights on in the server room" the roles of **the CIO should be broken up into four different "roles"**:

- **Orchestrator**
- **Builder**
- **Protector**
- **Operator**

This shift reflects the evolving demands of the digital age, where **technology is no longer just a support function but a core driver of business strategy and innovation.**

Strategic Value Creation by different CIO Roles



Orchestrator

Translate business strategy into a technology roadmap.

Leads digital and AI initiatives across IT and business

Accountable for value creation



Builder

Creates new digital- and AI-first businesses

Generates revenue



Protector

Owns revenue protection

Owns technical debt repayment

Focuses on cybersecurity and business resiliency



Operator

Integrates technology into core business functions

Runs and maintains enterprise systems

Enhances operational efficiency



CIOs act as **strategic partners to other business units, collaborating to identify opportunities** and solve problems using technology.

Aligning the tribes of the digital economy when it comes to **allocating IT resources for maximum business value.**

CIOs are evolving **budget planning from an annual cycle to a quarterly one**, allowing for more fluidity to move NIS **depending on new priorities** or changes to the business.

IT Budget governance has labeled and studied as **“deservingness”** (who gets what and why)

“Organizations get the technology they deserve.”

IT exec mediate disputes between:

- Business strategy groups and IT teams
- Application developers and operations people



Tech leadership has **evolved from focusing solely on core technology to harnessing digital and AI products**

The link between new tech and building business value ... examples :

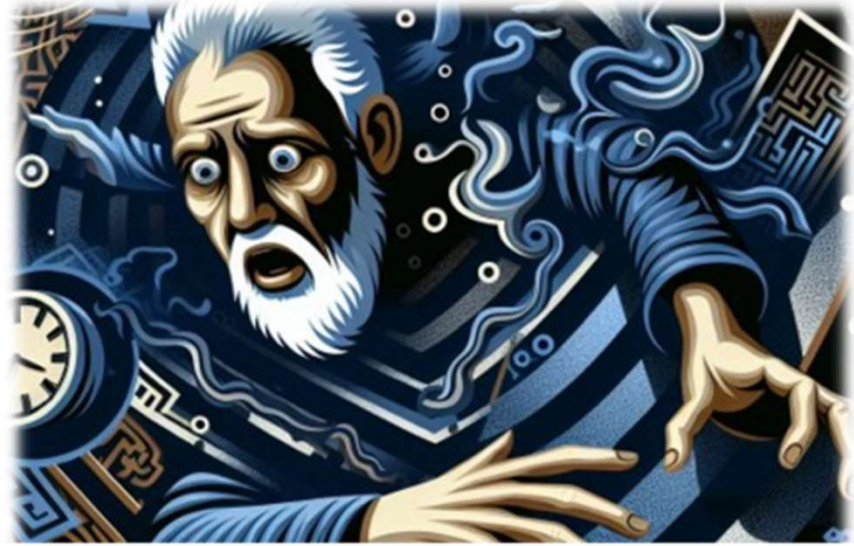
- *Personalized Content Recommendations:*
- *AI-Powered Personalized Learning Platforms:*
- *Chatbots and Virtual Assistants:*
- *Interactive Virtual Assistants for Customer Service:*
- *AI-Driven Content Creation*



Some of the areas the protector is involved:

- *Data Protection:*
- *Network Security:*
- *Endpoint Security:*
- *Application Security:*
- *Cloud Security:*
- *User Awareness and Training:*
- *Incident Response:*
- *Physical Security:*
- ***Maintenance***
 - ***Proactive and Reactive Maintenance***
 - ***Regular Maintenance***
 - ***Unexpected Failures***
- ***Technical Debt (old and new)***

Nightmares of my house in trouble



we built our house with all the “innovations” that we could afford*

** problems with mortgage*

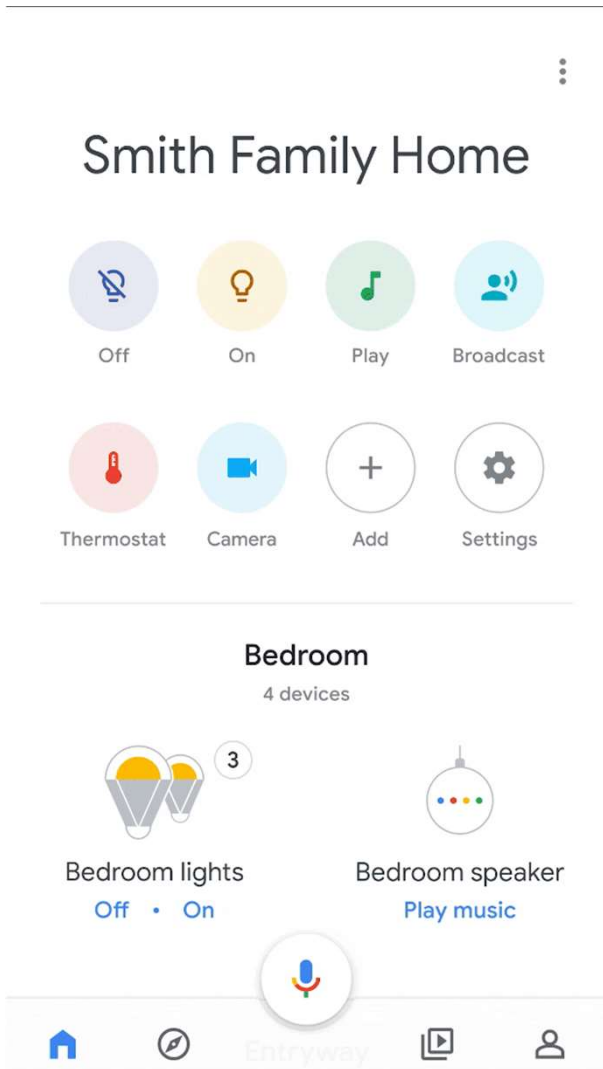
- **american house technology**
 - *(wooden house, shingles, etc),*
- **every room**
 - *(has a coaxial TV cable, ethernet cable and phone connector);*
- **many other systems not relevant today**
 - *(satellite TV, window alarm sensors, septic tank, etc)*

Most of those innovations are either disconnected or “working legacies” or “technical debt” today



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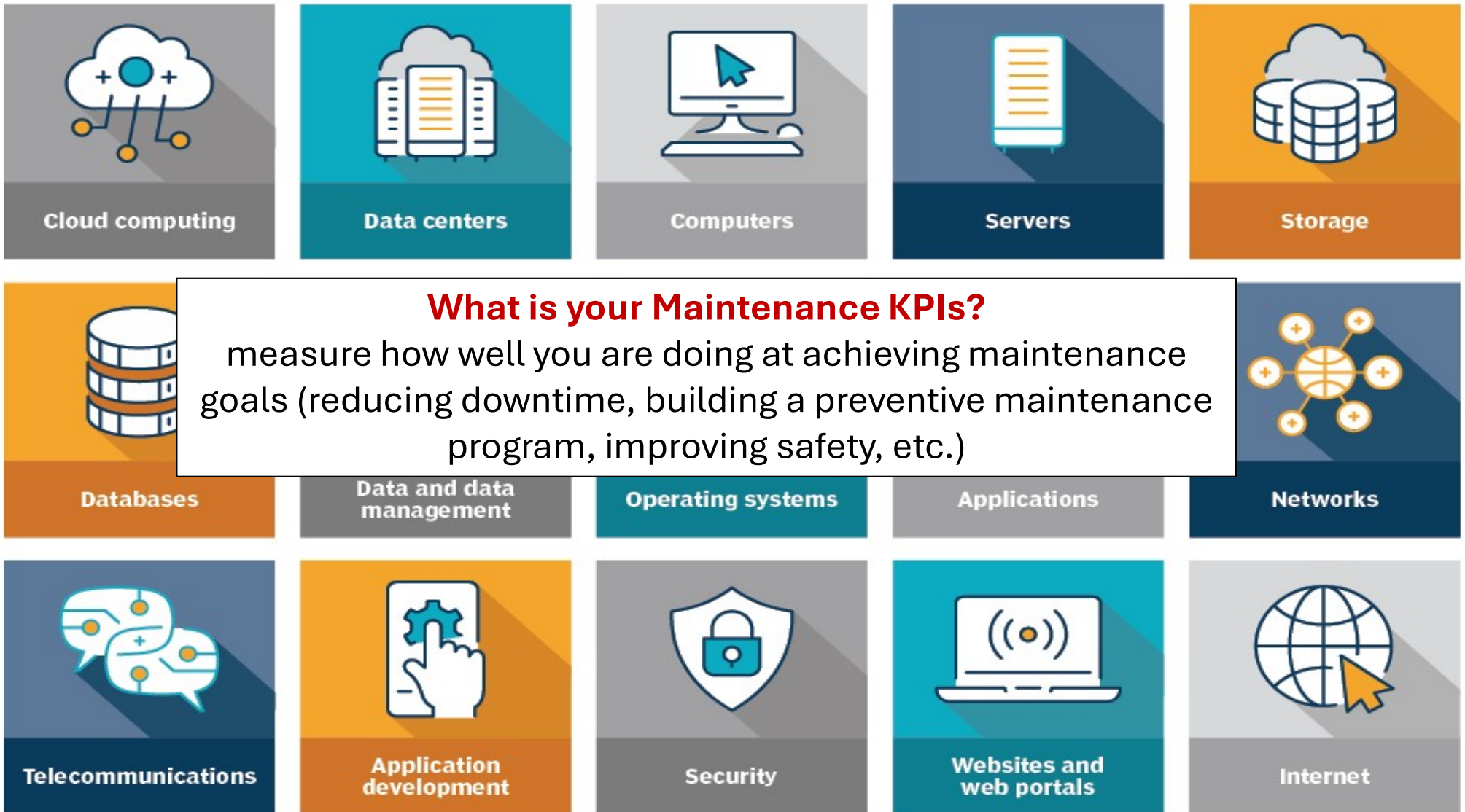
My neighbor's Automated House 2024



Before we automate, we must make
sure **all systems** are
“maintained, fixed and ready”



- Windows
- Doors
- Paint (outside & inside)
- Foundation
- Security (alarm + cameras)
- Kitchen Appliances
- GAS (cooking)
- HVAC (Heating, Ventilation, and Air Conditioning)
- Plumbing
- Appliances (TV, etc)
- Electricity (+ generator)
- Internet
- Roofing
- Insulation
- Sewerage
- Hot Water and Solar Panels:
- etc



“Technical Debt”

- Age of most senior manpower employees (that hold important application software knowledge) is over 65
- Outdated infrastructure (software/ hardware)
- Outdated software (several versions behind latest vendor version)
 - ERP and/or CRM
- Outdated data management tools (ETL, DW, BI)
- Core systems based on outdated technologies (not in itself broken systems) but are critical to day-to-day operations
- Inability to integrate applications or processes (in-house or partners)
- Missing documentation
- Un-commented configuration
- Un-documented code changes



How To FIX **NEW** Technical Debt



“Make **technical debt part of every conversation** with your developers and maintenance managers.”

Be an organizational **advocate for maintenance**

“Encourage your teams to **track technical debt in the same place they track other development items.**”

Technical Debt is everything that stops us from developing software quickly.

How To FIX **NEW** Technical Debt

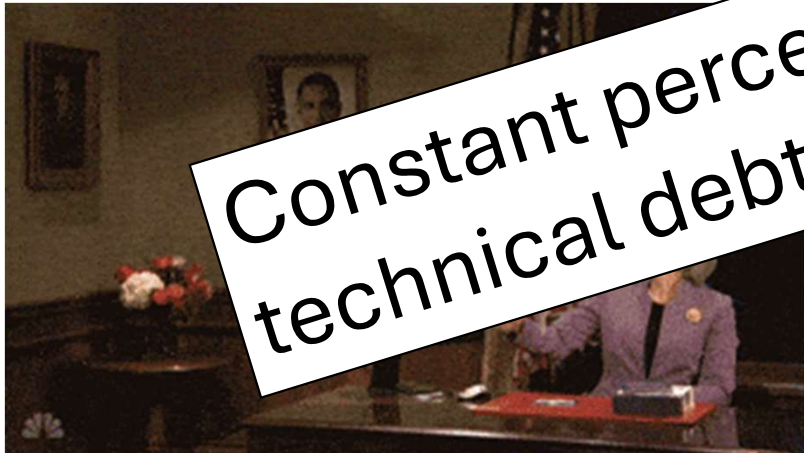
“Make **technical debt part of every conversation** with your developers and maintenance managers.”

Be **explicit** and **allocate for**

Constant percent (?) to pay technical debt and modernization

Encourage your teams to **track technical debt in the same place they track other development items.**”

Technical Debt is everything that stops us from developing software quickly.





1 Interaction explosion

From:
Mobile apps

To:
Multiverse of digital interactions

IT:
Build for immersion and many devices and agents

Business:
Bring rich engagement to your customers



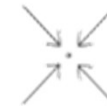
2 Connected intelligence

From:
Big-data models

To:
AI agents

IT:
Embed machine learning in every application

Business:
Personalize every customer episode, optimize every process



3 Distributed meaning

From:
Murky data lakes

To:
Open data fabrics

IT:
Mesh data together, leave it where it is

Business:
Know more and participate in the data economy



4 Limitless modularity

From:
Integrated applications

To:
Decoupled components

IT:
Compose applications from readily available resources

Business:
Plan for constant evolution



Source: Bain & Company

—“The essence of strategy is choosing what not to do” —

Michael Porter



That's it.

Thank you!

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