Riding the Efficient Frontier of Technology Diffusion Tidal Waves

MiraclePlus @ Silicon Valley

February 18th 2023

The Efficient Frontier: Technology Diffusion Tidal Waves

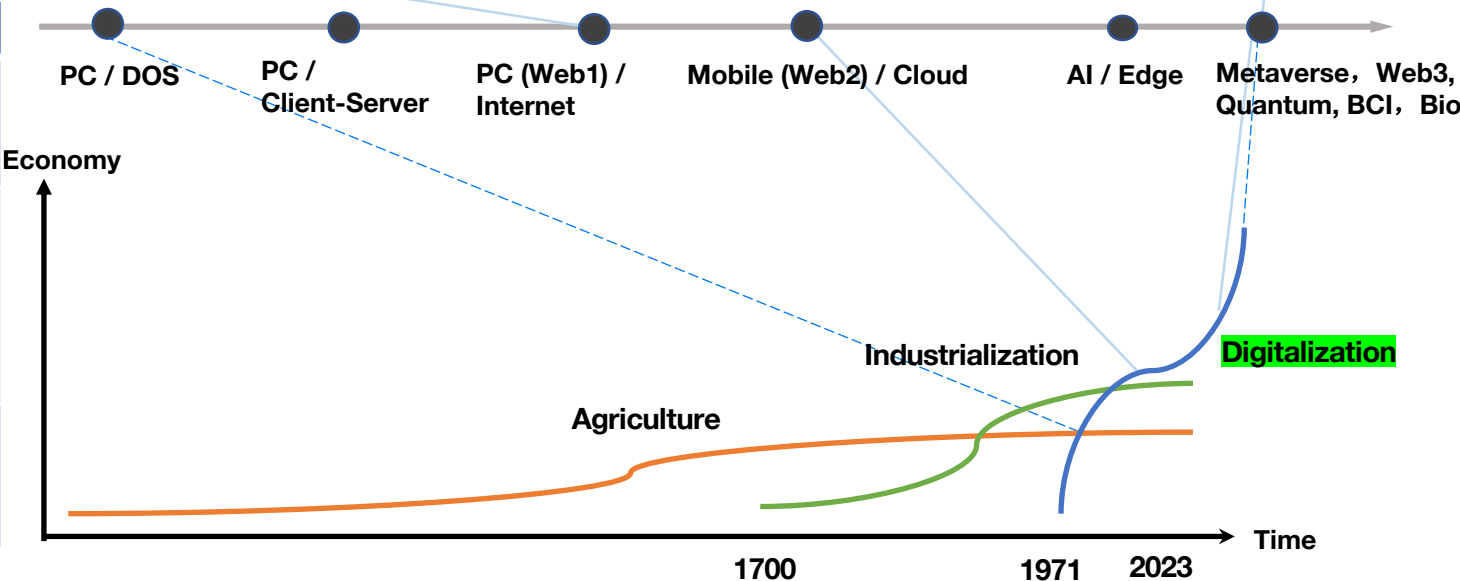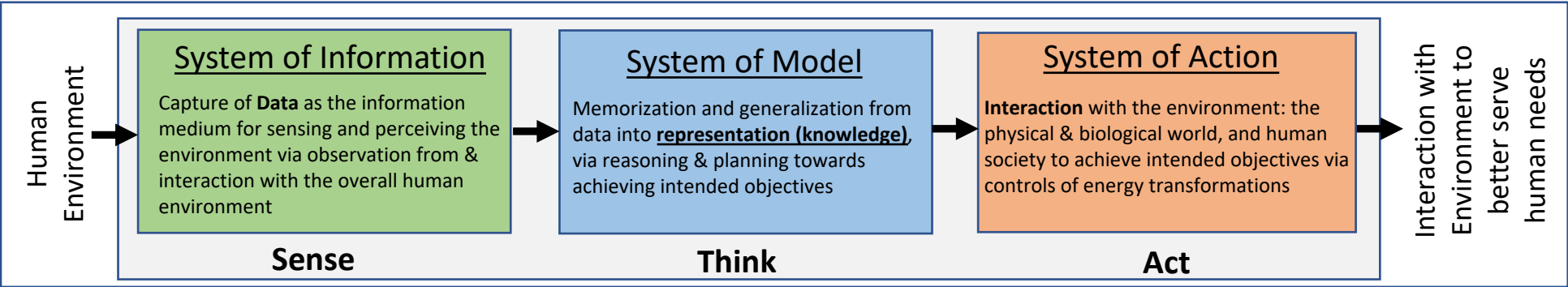| New Energy	New Life Science	New Material Science	New Space-Tech
Ever-more digitization => Software Eats the World | Tech-Industry = Innovation-As-Productive-Capital <= Ever-more efficient energy transformation			
Successive Generations of Digital Platforms	Mobile / Cloud	AI / Edge (EV/Autonomous Driving, Generative-AI)	Emerging Platforms (Metaverse, Web3, BCI, Quantum)

**Humanity Ever-Quest**

Wealth

Capability

Knowledge

Forces	Structures	Development Systems
Discovery Optimization	Space Time Knowledge	**Economy** Agriculture Industrialization Digitalization
Speed Efficiency	Information Energy	**Technology** • "Programmable": harness information • "Executable": transform energy • Goals: better satisfy human needs
Explanation Prediction	Reduction Complexity	**Science** Paradigms: 1st, 2nd, 3rd, 4(5)th (Data-Driven)

PC / DOS   PC / Client-Server   PC (Web1) / Internet   Mobile (Web2) / Cloud   AI / Edge   Metaverse，Web3, Quantum, BCI, Bio

Economy

Industrialization

Digitalization

Agriculture

Time

1700   1971   2023

The Intrinsic Trilogy of Digitization Diffusion Paradigms

A fundamental structural evolution pattern for any complex adaptive systems: human, society, etc.
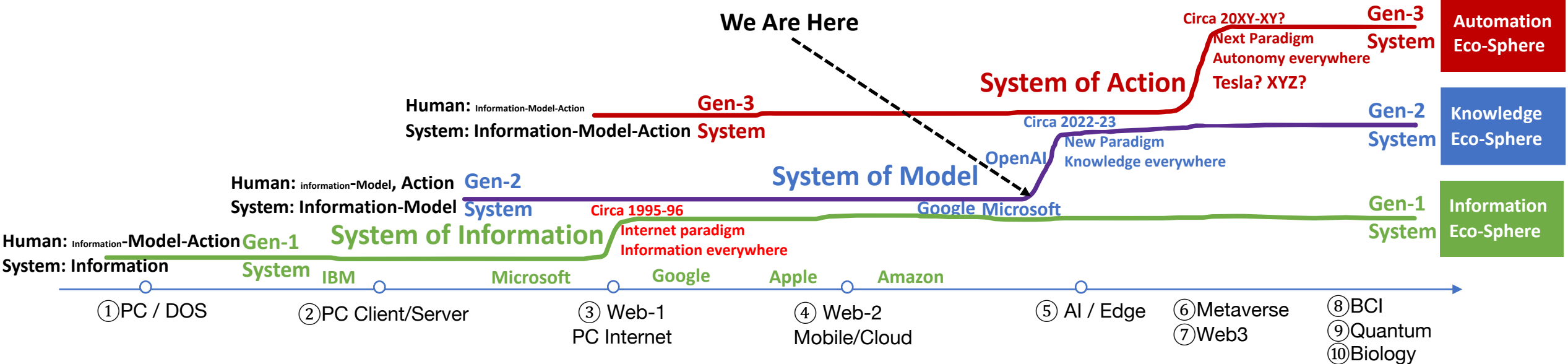
The Arrival and Unfolding of A New Paradigm

- Reached inflection point

  Foundation model encapsulates world's knowledge
  - Wide enough: everyone can use
  - Deep enough: most tasks
  - Useful enough: NL / code alignment
  - Expansive enough: domain expansive
  - Cheap enough: over a cost threshold

- NL is a key breakthrough
  - **The Special latent space**
  - NLP never works without knowledge
  - Essential bridge between human & world
  - Sustained avenue of alignment
  - Safety and societal co-evolution

The Engine Of Progress

- Expansive model architecture
- Effective-enough computation
- Sufficient tokens & tokenization
- Gradual scaling parameters
- Evolvable alignment (esp. NL)
- Extensible task-domain expansion

**Base: Transformer
Operate: Prompt/Finetune/ICL
Expand: Emergence/Extensibility**

- Progress flywheel starts spinning
  - **Capital investment threshold**
  - Biz models and future profits viable enough
  - Computation, infrastructure, toolchain
  - New platforms & business eco-systems in-motion
  - New workloads / apps & services / devices
  - Safety / societal acceptance / co-evolution
  - Startups / enterprises start making profits
  - Demonstrable societal benefits

- Further sustained technology progress
  - **Advancing core R&D agenda**
  - Model: sparse expert, recurrence, causality, etc.
  - Model regime: neural-symbolic
  - More modalities, token space and tokenization
  - Essential engineering development
  - Computation, infrastructure, toolchain
  - Label data methodology and tools

Macro Opportunity Landscape (Long Term)

- Massive new economic paradigm
  - Cost of knowledge: creation & access
  - Systematic shift: marginal-cost to fixed-cost
  - Broad re-shaping of global economies
  - Significant elevation of knowledge-driven industries

- Deep impact on every profession
  - All aspects of knowledge & cognitive endeavor
  - All tasks involving cognition and/or motor-sensory
  - Human professional + co-pilot(s)
  - Human professional + auto-pilot (s)
  - Human professional + pilots-team
  - Human & co-pilot(s) + auto-pilots as future organization

- Deep impact on every industry
  - **Restructure every sector**: marginal-cost to fixed-cost
  - [$X/hour (Human) - $Y/hour (HW + SW & Scaling)] x Volume = Value
  - Developers (Code), Designers (2D, 3D, Video), Researchers (Paper/Data)
  - Sales, Marketing, HR, Finance, Legal, all vertical areas
  - **Elevate every sector**: improve and automate domain-models
  - Science, Education, Healthcare, Manufacturing, Commerce
  - **Disruption to sector**: platforms, products; new winners/losers

- Deep impact on nation/state/region
  - Culture and identify
  - Defense and economy

- Deep impact on human endeavor
  - Learning and education
  - Research and discovery
  - Informative dissemination & social discourse & civic evolution

Opportunity Landscape via Micro Lens: Digital Platform Structures

The Anatomy of Digital Platforms

Front End				Back End	
Experience Canvas	Document, Image, Video/Audio; Chat(Text), Code	Space, World, Human(Avatar) Bio/Protein/++	Perception Stimulation	**Capability Provision**	Cloud, Edge, Web3(Trust), Model(Knowledge)
Experience Container	2D:Viewed/Listened Page, Frame, Text	3D: Embodied Metaverse XR-reality	Embedded:(BCI) Brain Computer Interface	**Infrastructure**	Communication Network, Data Center, Data Stack, Distributed System, Blockchain
Device & Equipment	Chip+Module+OS: PC, Mobile Phone, Watch, Glasses, Headset, Wearable, Implantable, Robot, Car, Place, Equipment (Bio Medical, etc.)			**Device & Equipment**	Chip+Module+OS: Server, Switch, Data Center, Satellite Constellation

Digitization Development Foundation

Computing System	Alpha Numeric Systems	Superimposed Vector Systems	Quantum Computing Systems
Computing Substrate	Silicon-Based		Quantum (electrons, photons, ions, atoms)
	Carbon-Based (Bio Computing)		
Development System & Environment: Toolchain, Published Research, Open-Source Software, Dataset, Design			

①PC/DOS — ②PC Client/Server — ③Web-1 PC Internet — ④Web-2 Mobile/Cloud — ⑤Artificial Intelligence — ⑥Metaverse ⑦Web3 — ⑧BCI ⑨Quantum ⑩Biology

Opportunity Landscape via Micro Lens: Gen-1 System Areas

The Anatomy of Digital Platforms

Front End				Back End	
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Opportunity Landscape via Micro Lens: Gen-2 System Areas

The Anatomy of Digital Platforms

Front End				Back End	
Experience Canvas	Document, Image, Video/Audio; **Chat(Text), Code**	Space, World, Human(Avatar) Bio/Protein/++	Perception Stimulation	**Capability Provision**	Cloud, Edge, Web3(Trust), **Model(Knowledge)**
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Timeline:
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Opportunity Landscape via Micro Lens: Gen-3 System Areas

The Anatomy of Digital Platforms

Front End				Back End	
Experience Canvas	Document, Image, Video/Audio; Chat(Text), Code	Space, World, Human(Avatar) Bio/Protein/++	Perception Stimulation	**Capability Provision**	Cloud, Edge, Web3(Trust), Model(Knowledge)
Experience Container	2D:Viewed/Listened Page, Frame, Text	3D: Embodied Metaverse XR-reality	Embedded:(BCI) Brain Computer Interface	**Infrastructure**	Communication Network, Data Center, Data Stack, Distributed System, Blockchain
Device & Equipment	Chip+Module+OS: PC, Mobile Phone, Watch, Glasses, Headset, Wearable, Implantable, **Robot, Car, Place, Equipment (Bio Medical, etc.)**			**Device & Equipment**	Chip+Module+OS: Server, Switch, Data Center, Satellite Constellation

Digitization Development Foundation

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Opportunity Landscape via Micro Lens: Gen-3++ System Areas

The Anatomy of Digital Platforms

Front End				Back End	
Experience Canvas	Document, Image, Video/Audio; Chat(Text), Code	Space, World, Human(Avatar) Bio/Protein/++	Perception Stimulation	**Capability Provision**	Cloud, Edge, Web3(Trust), Model(Knowledge)
Experience Container	2D:Viewed/Listened Page, Frame, Text	3D: Embodied Metaverse XR-reality	Embedded:(BCI) Brain Computer Interface	**Infrastructure**	Communication Network, Data Center, Data Stack, Distributed System, Blockchain
Device & Equipment	Chip+Module+OS: PC, Mobile Phone, Watch, Glasses, Headset, Wearable, Implantable, **Robot, Car, Place, Equipment (Bio Medical, etc.)**			**Device & Equipment**	Chip+Module+OS: Server, Switch, Data Center, Satellite Constellation

Digitization Development Foundation++

Computing System	Alpha Numeric Systems	**Superimposed Vector Systems**	Quantum Computing Systems
Computing Substrate	Silicon-Based		Quantum (electrons, photons, ions, atoms)
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Development System & Environment++: Toolchain, Published Research, Open-Source Software, Dataset, Design			

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Qi Lu @ MiraclePlus

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Model-first & model-oriented new genre of infra & tools
Some are capital-heavy, but good "picks & shovels" biz
Silicon architecture and systems
Networks and datacenters
Data systems and data stacks
Toolchains: esp. framework and tools
Open source: model, code, dataset, design…

Digitization Development Foundation

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Device & Equipment	Chip+Module+OS: PC, Mobile Phone, Watch, Glasses, Headset, Wearable, Implantable, Robot, Car, Place, Equipment (Bio Medical, etc.)		

Back End

Capability Provision	Cloud, Edge, Web3(Trust), **Model(Knowledge)**
Infrastructure	Communication Network, Data Center, Data Stack, Distributed System, Blockchain
Device & Equipment	

New Platforms: Model-First & Model-Oriented
Complete: out-of-box enough usage values
Extensible: extensibility model to enable eco-system
Business model: value creation for developers & partners
Killer apps: vertical extensions that capture substantial values
Anchors: potential extension: toolchains, infra, silicon stack
Anchors: potential future extension: devices and equipment
The race begins: OpenAI, Microsoft, Google, startups, China

Digitization Development

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Opportunity Landscape via Micro Lens: Digital Meets Human Needs

Demand Pulled

Human Needs — Digital Means to Satisfy Human Needs	Consumer: Hierarchy-of-Needs x Demo Groups x Time Period														Producer			Business: Reduce Costs & Increase Yields							
	Communication	Social	Content	Gaming	Consumption	Tourism	Fitness	Health-care	Education	Finance	Housing	Sleep	Information & Knowledge	Food & Beverage	Development	Design	Research	Production	Supply Chain	Sales & Marketing	Customer-Support	Employee Experience	Finance	Legal	General Adminstration
I: **Information (2D)** Sensed Indirect Interaction																									
II: **Experience (3D)** Embodied Direct Interaction		(blue)	(blue)	(blue)																(blue)		(blue)			
III: **Relationship (Abstract)** Trust | Incentive | Ownership		(gray)	(gray)	(gray)						(gray)															
IV: **Physical External Env** In-situ & Direct						(orange)												(orange)							
V: **Physiological Internal Sense** Innate & Direct								(yellow)																	
IV: **Knowledge | Model** Embedded & Enabled																									

Tech-Driven

● **Tech-Driven Patterns**
- Singular Breakthrough
- Multi Points Convergence
- Vertical Penetration
- Horizontal Proliferation

● **Demand-Pull Patterns**
- Narrow Single Point Entry
- Broad Multi Point Entry
- Vertical Penetration
- Horizontal Expansion

IV	⑤	Knowledge | Model: Embedded & Enabled →
V	⑧④⑤⑨	Physiological Sense: Innate & Direct →
IV	⑤④⑨	Physical Environment: In-situ & Direct →
III	⑦③④⑤⑥⑨	Relationship: Trust | Incentive | Ownership →
II	⑥③④⑤⑦⑨	3D Experience: Embodied Direct Interaction →
I	③④①②⑤⑨	2D information: Sensed Indirect Interaction →

Timeline:
① PC / DOS
② PC Client/Server
③ Web-1 PC Internet
④ Web-2 Mobile/Cloud
⑤ AI / Edge
⑥ Metaverse
⑦ Web3
⑧ BCI
⑨ Quantum
⑩ Biology

Opportunity Landscape via Micro Lens: Digital Meets Human Needs (Cont.)

Search & Ads: the first Gen-2 Genre Platform
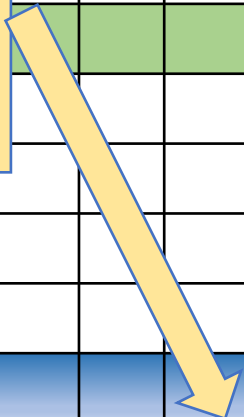**Information dissemination via a Large and Adaptive Model**
Massive Fixed Cost and High Scale Impact as Moat
Google dominates, with Bing, Baidu, Yandex following
The shot-of-the-bow: ChatGPT + Bing vs Google + Bard
Startup opportunities? You.Com, Neveer, etc.
Future landscape: new costs/values, biz model, vertical, new genre

Demand Pulled

Human Needs	Consumer - Hierarchy of Needs x Demo Groups x Time Period							Producer			Business: Reduce Costs & Increase Yields							
Digital Satisfies				Housing	Sleep	Information & Knowledge	Food & Beverage	Development	Design	Research	Production	Supply Chain	Sales & Marketing	Customer-Support	Employee Experience	Finance	Legal	General Adminstration
I:Information Sensed																		
II:Experience Embodied																		
III:Relationship Trust | Incentive | Ownership																		
IV:Physical External Env In-situ & Direct																		
V:Physiological Internal Sense Innate & Direct																		
IV:Knowledge | Model Embedded & Enabled																		

Tech-Driven

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IV ⑤ Knowledge | Model: Embedded & Enabled →
V   ⑧④⑤⑨ Physiological Sense: Innate & Direct →
IV ⑤④⑨ Physical Environment: In-situ & Direct →
III ⑦③④⑤⑥⑨ Relationship: Trust | Incentive | Ownership →
II ⑥③④⑤⑦⑨ 3D Experience: Embodied Direct Interaction →
I   ③④①②⑤⑨ 2D information: Sensed Indirect Interaction →

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Demand Pulled

Human Needs	Consumer: Hierarchy-of-Needs x Demo Groups x Time Period														Producer			Business: Reduce Costs & Increase Yields						
Digital Means to Satisfy Human Needs	Communication	Social	Content	Gaming	Consumption	Tourism	Fitness	Health-	Educati	Finance	Housing	Sleep	Information &	Food & Beverag	Developm	Design	Resea	Product	Supply	Sales & Marketing	Customer-Support	Employee Experience	Finance	Legal	General Adminstration
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IV: Knowledge | Model Embedded & Enabled																								

Disruption everywhere: due to production cost structural change
Modality: text, image, audio, video, 3D
Genre: models to cover all genre categories
Experience: Gen-2 with new metaphor / affordance
Experience: New and evolved device form factors
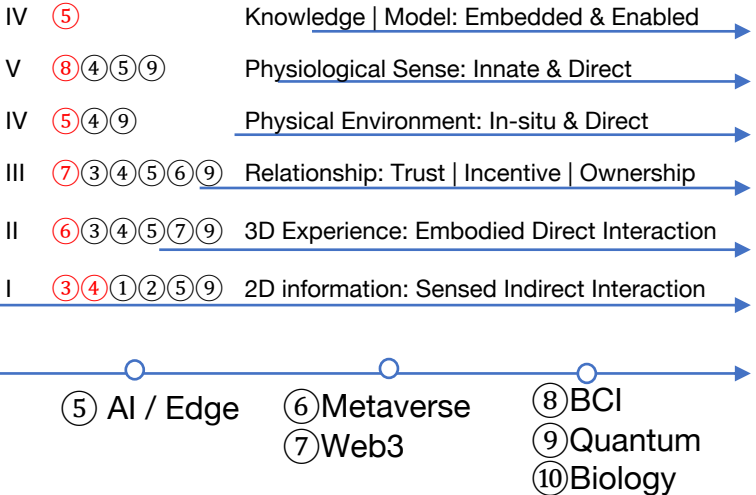Platform possibilities: expansive models

Tech-Driven

● **Tech-Driven Patterns**

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-Narrow Single Point Entry
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IV ⑤ Knowledge \| Model: Embedded & Enabled
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I ③④①②⑤⑨ 2D information: Sensed Indirect Interaction

①PC / DOS　②PC Client/Server　③ Web-1 PC Internet　④ Web-2 Mobile/Cloud　⑤ AI / Edge　⑥Metaverse　⑦Web3　⑧BCI　⑨Quantum　⑩Biology

Demand Pulled

Tech-Driven

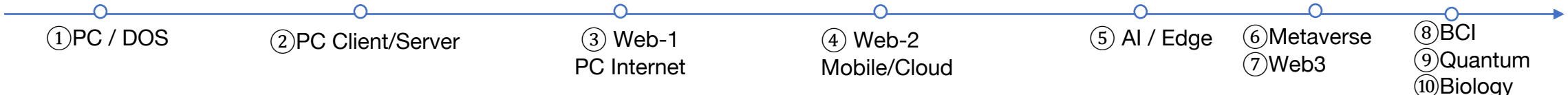| Human Needs	Consumer: Hierarchy-of-Needs x Demo Groups x Time Period														Producer			Business: Reduce Costs & Increase Yields						
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🔵 **Tech-Driven Patte...**

- Singular Breakthrough
- Multi Points Convergen...
- Vertical Penetration
- Horizontal Proliferation

Massive opportunities due to development cost structure change
Model-driven assets, scenes, etc.
Model-enabled new experiences, NPC, co-pilots, auto-pilots etc.
New device form factors and endpoint possibilities

⑤ → Knowledge | Model: Embedded & Enabled

⑧④⑤⑨ → Physiological Sense: Innate & Direct

⑤④⑨ → Physical Environment: In-situ & Direct

⑦③④⑤⑥⑨ → Relationship: Trust | Incentive | Ownership

⑥③④⑤⑦⑨ → 3D Experience: Embodied Direct Interaction

③④①②⑤⑨ → 2D information: Sensed Indirect Interaction

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Demand Pulled

Tech-Driven

Compelling model as the new content, new social connections
Horizontal possibilities: FB, Ins, YouTube, TikTok, WeChat, etc.
Vertical possibilities: LinkedIn, Tinder, etc. enabled with models

🔵 **Tech-**

-Singular
-Multi Poi
-Vertical F
-Horizonta

IV	⑤	Knowledge | Model: Embedded & Enabled
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> **Horizontal possibilities: FB, Ins, YouTube, TikTok, WeChat, etc.**
> **Vertical possibilities: LinkedIn, Tinder, etc. enabled with models**

Tech-Driven

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🔵 **Demand-Pull Patterns**

- Narrow Single Point Entry
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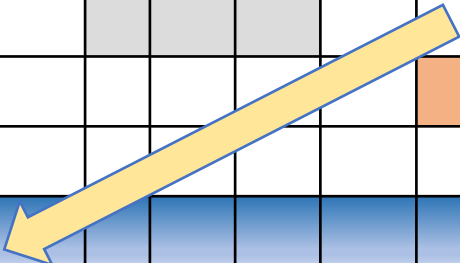| IV	⑤	Knowledge | Model: Embedded & Enabled
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⑩ Biology

Demand Pulled

Human Needs	Consumer：Hierarchy-of-Needs x Demo Groups x Time Period											Producer		Business: Reduce Costs & Increase Yields							
Digital Means to Satisfy Human Needs	Communication	Social	Content	Gaming	Consumption	Tour		Health-	Educati	Information &	Food &	Developm		Resea	Product	Supply Chain	Sales & Marketing	Customer-Support	Employee Experience	Finance	Legal	General Adminstration
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V:**Physiological Internal Sense** Innate & Direct																						
IV:**Knowledge | Model** Embedded & Enabled																						

Big opportunities as well as big disruptions
By nature comms are more horizontal workloads
By nature comms are shallower with mostly information
Built-in with core and extensible models
Extensibility with model eco-systems
Collaboration as a pervasive canvas
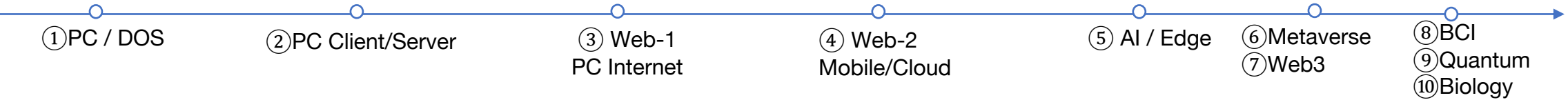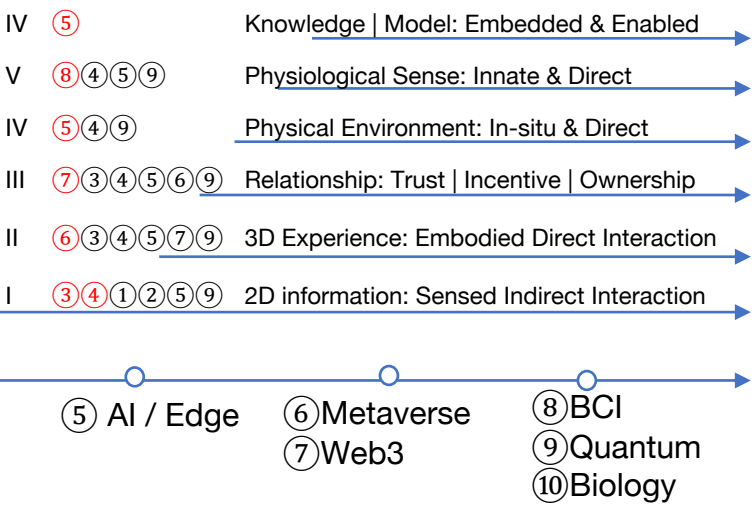Platform possibilities with breadth and depth in values

Tech-Driven

● **Tech-Driven Patterns**

-Singular Breakthrough
-Multi Points Convergence
-Vertical Penetration
-Horizontal Proliferation

● **Demand-Pull Patterns**

-Narrow Single Point Entry
-Broad Multi Point Entry
-Vertical Penetration
-Horizontal Expansion

IV ⑤ Knowledge \| Model: Embedded & Enabled →
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III ⑦③④⑤⑥⑨ Relationship: Trust \| Incentive \| Ownership →
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①PC / DOS
②PC Client/Server
③ Web-1 PC Internet
④ Web-2 Mobile/Cloud
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⑥Metaverse
⑦Web3
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Demand Pulled

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Huge, extensive, deep, opportunities for the ages
Different languages
Different domains
Different phases
Elevating values
Expanding opportunities

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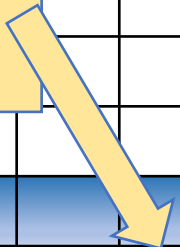I ③④①②⑤⑨ → 2D information: Sensed Indirect Interaction

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Demand Pulled

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Interesting opportunities across categories
Cost shift and value migration in eco-system
New creative process
New creative talent
Increase volume
Elevating quality
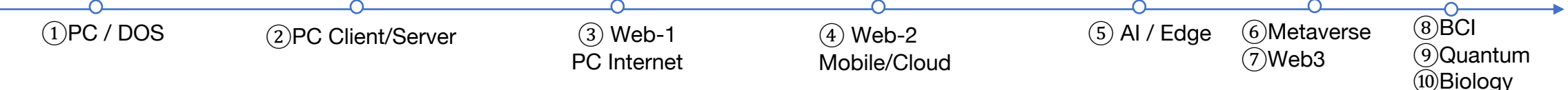**Platform possibilities**

Tech-Driven

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> **Most existing and profound opportunities**
> **Know-how models for every discipline and every scientist**
> **Depth and width for growing scientific domains**
> **Rapidly expanding the speed of discoveries**
> **Significantly elevating high-value domains**
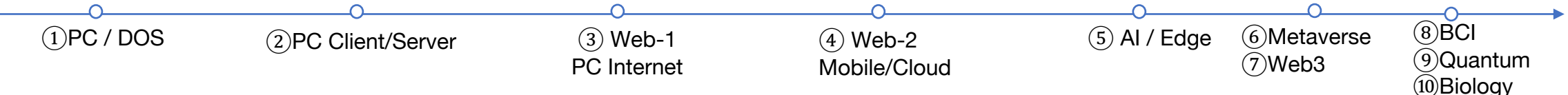> **New academia and industry eco-system: the 4th paradigm**

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> Sales and Marketing are historically closer to Gen-2 than most
> SFDC and Adobe with decent coverage of data and models
> Opportunity to optimize the cost structure
> Opportunities in additional data and more versatile models
> Opportunities in new S&M professional experiences
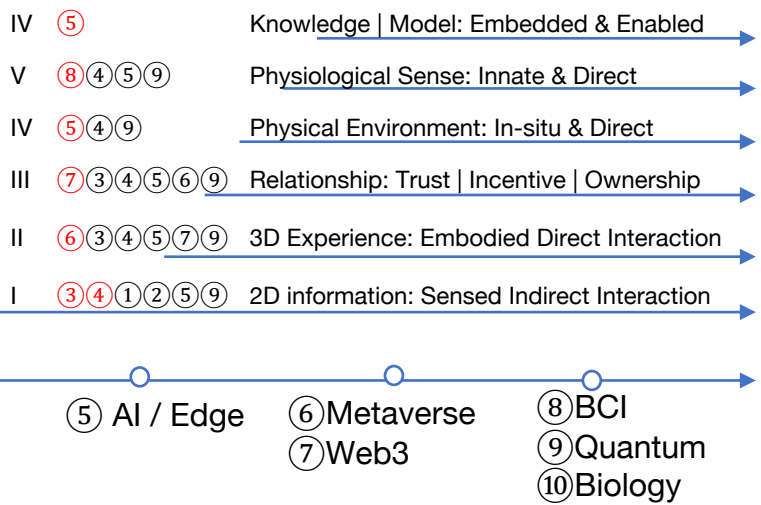> Opportunities in new customer experiences

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Opportunity Landscape via Micro Lens: Digital Meets Human Needs (Cont.)

Demand Pulled

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> Gen-2 system will cover most of the ERP categories
> Replace and/or extend the rigid domain models
> Much richer and flexible domain and know-how models
> Much enhanced user experience and elevated productivity
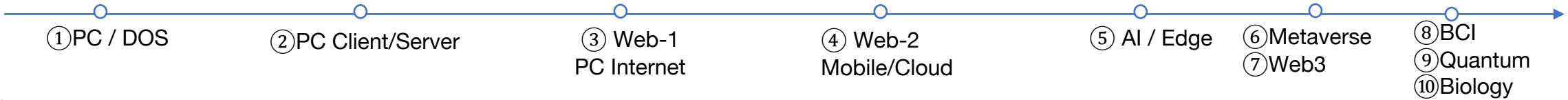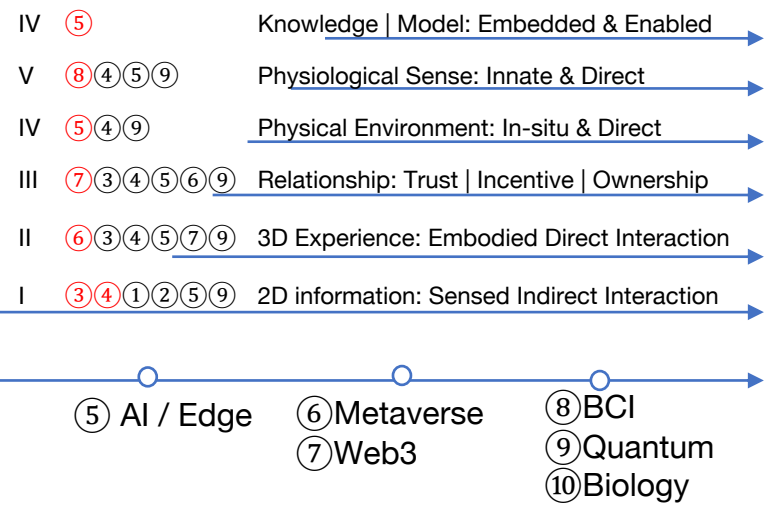> Gen-3 system opportunities: Office Robots, Room, Places

Tech-Driven

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Callout box:
Industrial production is a massive Gen-2 + Gen-3 opportunities
Every factory floor, every warehouse, every production line
Extensive and richer domain models than previous rigid modes
Autonomy and automation cover growing categories over time
Device and equipment opportunities: e.g. robots
Can also extend to cover agricultural activities
Over time, human labor be gradually augmented and replaced

Tech-Driven

🔵 **Tech-Driven Patterns**

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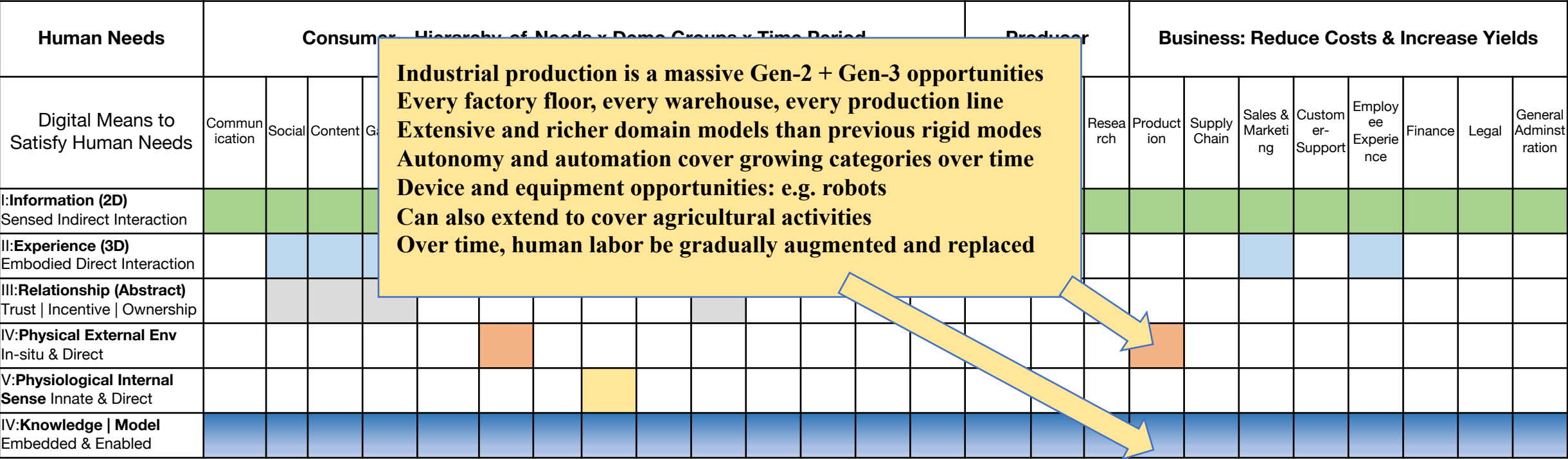- Vertical Penetration
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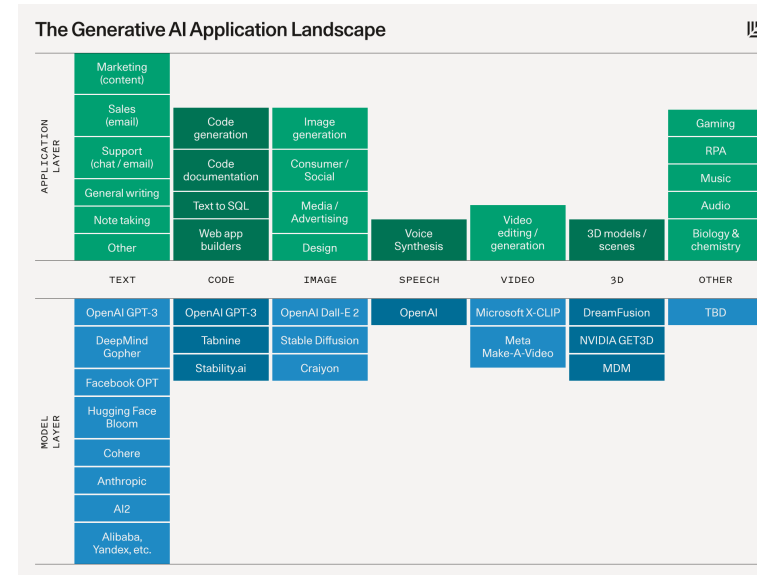②PC Client/Server
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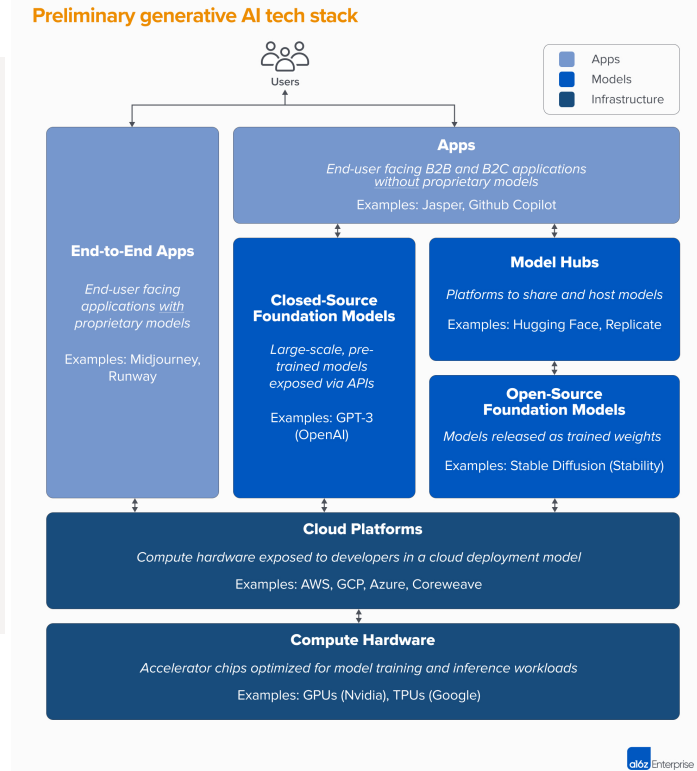④ Web-2 Mobile/Cloud
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⑩Biology

New Paradigm leads to New Startup Landscape

- The Opportunity ahead is Massive

- New emerging startup eco-system
  - Reference to other VC memos
  - Think critically on your own

- Learning from OpenAI: my reflection
  - Sam Altman
  - The journey of OpenAI
  - It is not just the cutting-edge technology
  - Vision, ambition, thinking differently, perseverance
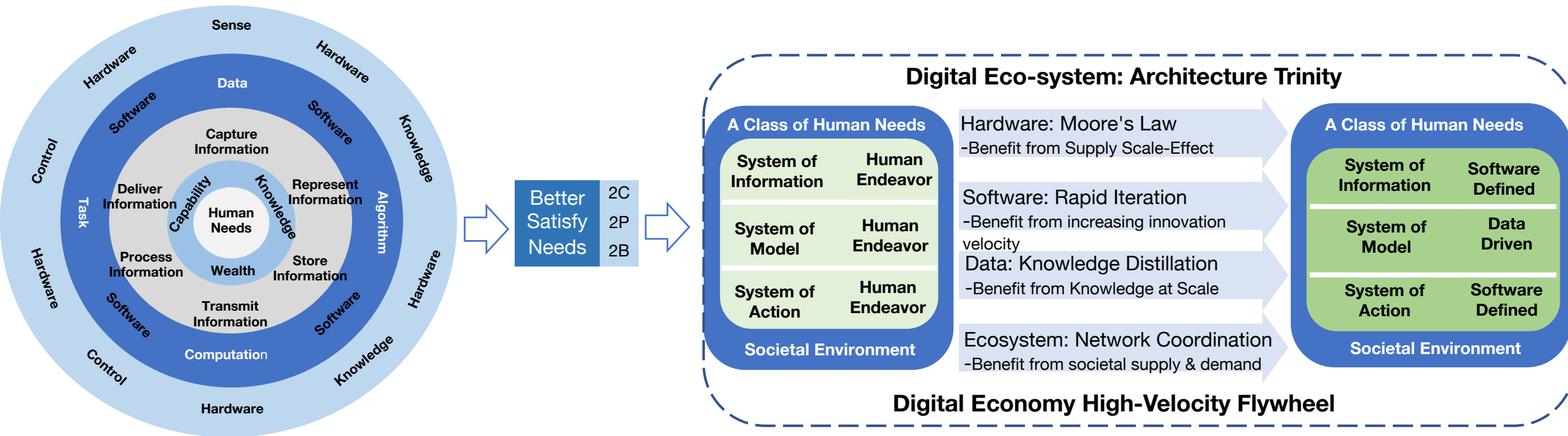 - Disciplined execution matters the most

The Generative AI Application Landscape

Courtesy of Sequoia

Preliminary generative AI tech stack

Courtesy of A16Z

Digital Long Tide & Powerful Flywheel of Digital Economies

Digitization is an innate extension of human being; it is an ever-progressing historical long tide with big waves

① PC/DOS
② PC Client/Server
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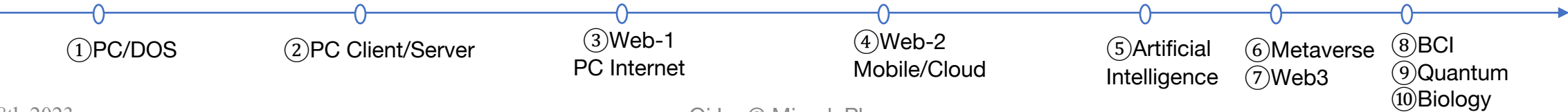
The Efficient Frontier of Technology Driven Innovations: Opportunity Map

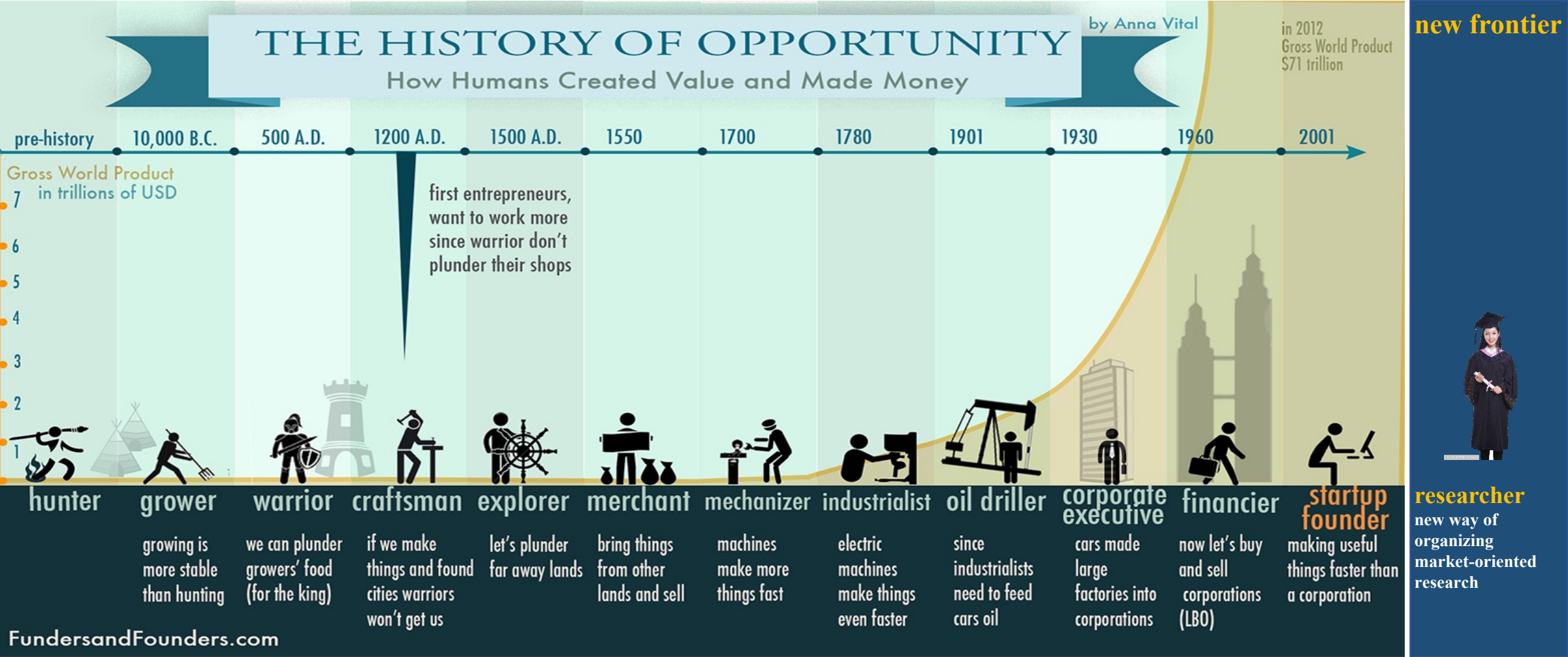| New Energy	New Life-science	New Material Science	New Space-Tech
Sustainability-as-primary-driver, solar & wind energy, energy storage, carbon capture, electrification via new batteries, hydrogen, nuclear fusion, etc.	Computation-driven R&D paradigms; new synthetic biology R&D system for better products/new product categories; new healthcare R&D system with new therapeutics, immunology, regeneration, precision-medicine, antiaging, and much more.	Industrial-needs-driven + computation & data-driven R&D paradigm; new structure and new processes in a variety of areas such as photonics with optical sensing & computation, semi-conductors, bio etc.	Earth surface: AD, VTOL, deepsea; orbital space: constellation of sensing and communication; deep space: in-situ development; planets and outer space: explorations

Energy transformation is increasingly modularized, standardized, miniaturized, software-defined & data-driven → **Technology-driven innovation increasingly becomes direct & primary productive capital** ← **Information harnessing is increasingly modularized, standardized, software-defined & automation-driven**

Platform	Mobile / Cloud	AI / Edge	Metaverse	Web3	BCI	Quantum
Application	2C: fulfill more vertical demands	2C: Create new & improve all existing categories	2C: Content, Social Comms, Games	2C: DeFi, NFT, DID, GameFi, SocialFi	2C: : Rehab, interaction	2C: Education, Community
	2P: dev, design, creation	2P: ML-ops, new development genre & professions new toolchains and ecosystems	2P: Dev, Design, Creation tools	2P: Dev Tool	2P: Early R&D	2P: Dev System
	2B: cover more horizontal demands	2B: Embedded industrial and agricultural devices; automation, data-driven automated decision support	2B: Collaboration, Marketing	2B: DAO	2B: Service	2B: Special HW/SW; simulation; PQC security
Front End	Canvas: vertical short video (Tik Tok)	All modality sensors & actuators; natural interactions	Glasses, Head-Mount Devices, Optical Module; Special-purpose chips, Devices and Device-OS	Wallet, Mobile Phone	Specialized equipment Materials, chips	Can utilize existing general and special equipment's; Materials, Agriculture, etc.
	Container: AR (part of cross-platform metaverse experience)	Embed in existing ones and create new ones				
	Devices: more perception capabilities	Embed in existing ones and create new ones: e.g. cars, drones, robots, places, etc.				
Back End	Capability Provision: Cloud Native (k8, WASM, FAAS)	Capability provision: vertical AI cloud or AIOT edge; MaaS; Knowledge-Capability-API (aka OpenAI)	Next-gen 3D Engines; Neural Rendering chip/hardware/infra; special-purpose Chips, 3D Distributed Computing Systems	Technology stack (L0-L4); capacity expansion via ZK; Datalinks & Oracle; security, privacy	Vertical Cloud Services (based on neural system)	Chips, devices, and equipment based on (electron, photon, ion, atom) quantum mechnisms
	Infrastructure: data stack, communication network, new IaaS	Infrastructure: Generative AI, massive-parallel-training; high-scale/low-cost inference; new IaaS (data and label data); Cuda and parallelism; new Data Stack				
	Equipment & Facilities: High Performance Computing (HPC) Chip, High capacity computing chips	Back-end devices: higher computing performance chips; newer packaging form via chiplets;				
Platform Essentials	Reaching everyone's terminal Digitally encapsulate and orchestrate the atomic power of any industry	Superposition vector-based computational system supporting all modality sensing and actuation; establish intelligent systems; intelligence embedded in front-end and back-end devices or new endpoints	3D digital experience container for all kinds of future experiences; across all platforms	Digital relationship for trust and incentive-ownership	Human-internal digital experience containers are cross-platformable	Computing System + Computing Cornerstone

The History of Opportunities: Entrepreneurism's New Frontier

THE HISTORY OF OPPORTUNITY
How Humans Created Value and Made Money
by Anna Vital

in 2012 Gross World Product $71 trillion

new frontier

| pre-history | 10,000 B.C. | 500 A.D. | 1200 A.D. | 1500 A.D. | 1550 | 1700 | 1780 | 1901 | 1930 | 1960 | 2001 |

Gross World Product in trillions of USD

first entrepreneurs, want to work more since warrior don't plunder their shops

hunter — (no caption)
grower — growing is more stable than hunting
warrior — we can plunder growers' food (for the king)
craftsman — if we make things and found cities warriors won't get us
explorer — let's plunder far away lands
merchant — bring things from other lands and sell
mechanizer — machines make more things fast
industrialist — electric machines make things even faster
oil driller — since industrialists need to feed cars oil
corporate executive — cars made large factories into corporations
financier — now let's buy and sell corporations (LBO)
startup founder — making useful things faster than a corporation

researcher new way of organizing market-oriented research
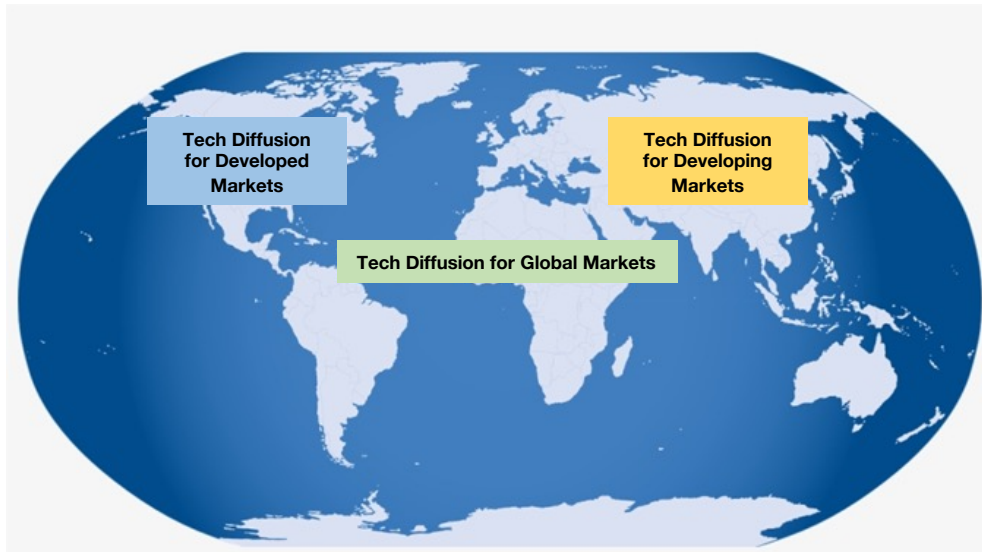
FundersandFounders.com

Scope of Opportunities: Global Diffusion Paradigm Shift
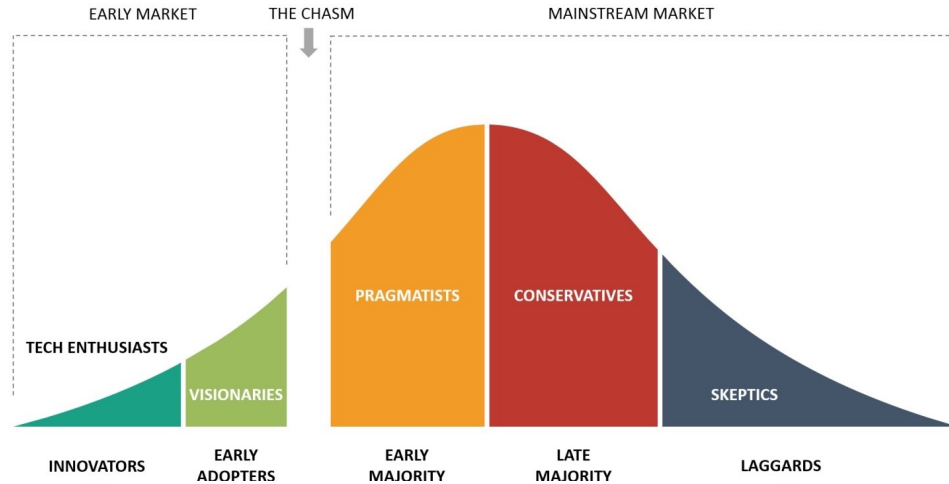
- Technology Diffusion Pillars
  - Access to Tech (global)
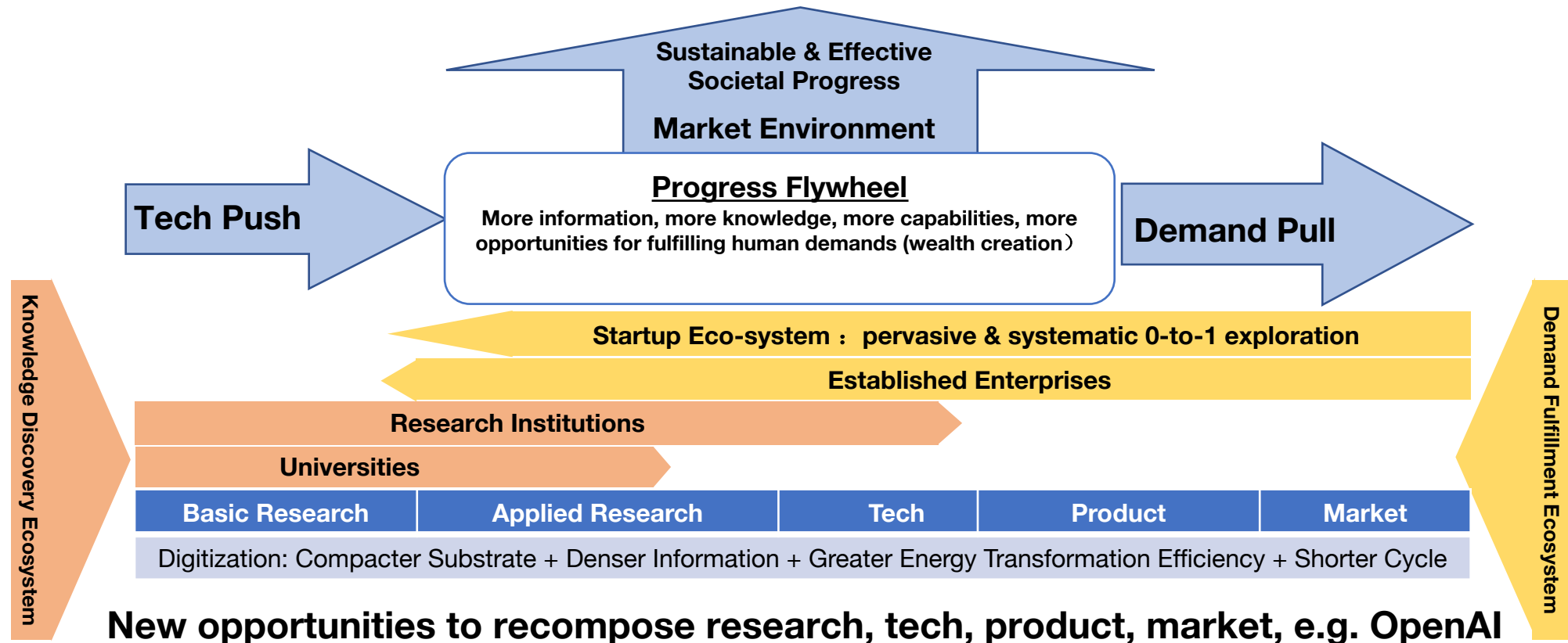 - Access to Capital (global)
  - Access to Market (US, developed markets; China, developing markets)
  - Access to Talent (US, China, local)

- Evolving Global Diffusion Models
  - US domestic & to other developed and developing markets
  - China domestic
  - China to other developing markets
  - China to US and other developed markets
  - Digital nomad to US, China, and all other markets

Historic Window of Opportunity: Paradigm Shift

Sustainable & Effective Societal Progress

Market Environment

Progress Flywheel
More information, more knowledge, more capabilities, more opportunities for fulfilling human demands (wealth creation）

Tech Push

Demand Pull

Knowledge Discovery Ecosystem

Demand Fulfillment Ecosystem

Startup Eco-system ：pervasive & systematic 0-to-1 exploration

Established Enterprises

Research Institutions

Universities

Basic Research	Applied Research	Tech	Product	Market

Digitization: Compacter Substrate + Denser Information + Greater Energy Transformation Efficiency + Shorter Cycle

New opportunities to recompose research, tech, product, market, e.g. OpenAI

Exciting Time: The Future Is Already Here

The Best Way to Predict the Future Is To Build It

MiraclePlus - Intro

- Started out as Y Combinator China in 2018

- Mission: maximize innovation at upmost origins

- Vision: the most vibrant entrepreneur community

- Highlights

  - **45803**- startup applications

  - **7** – successful localized-YC accelerator batches

  - **258** – high potential portfolio companies

  - **637**- founders in a vibrant & fast-growing community

  - **22%** - oversea HQ'd growing well beyond China

  - **9.5/10** - NSAT highly satisfied founders

It's Time To Build!

Qi Lu @ MiraclePlus

Q&A

Qi Lu @ MiraclePlus

Thank You!