luxexecutivesummit 2018
Boston • April 9-11

Digital Business Models

Using digital technologies to establish new paradigms for monetization

Shriram Ramanathan

Senior Analyst, Lux Research

Agenda

1 | **An extraordinary tale of digital transformation**

2 | **The digital business model framework**

3 | Applying the digital business model framework: Case studies

4 | Digital transformation case studies: Lessons learned

5 | **What should I do next?**

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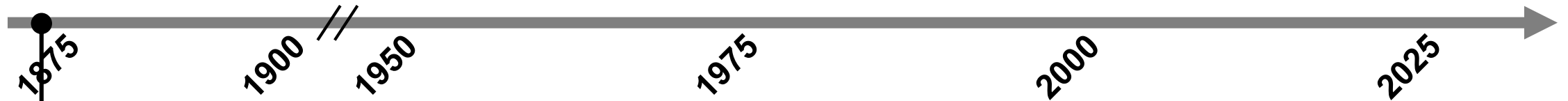**How did Nintendo transform from producing Japanese playing cards in the late 1800s…**
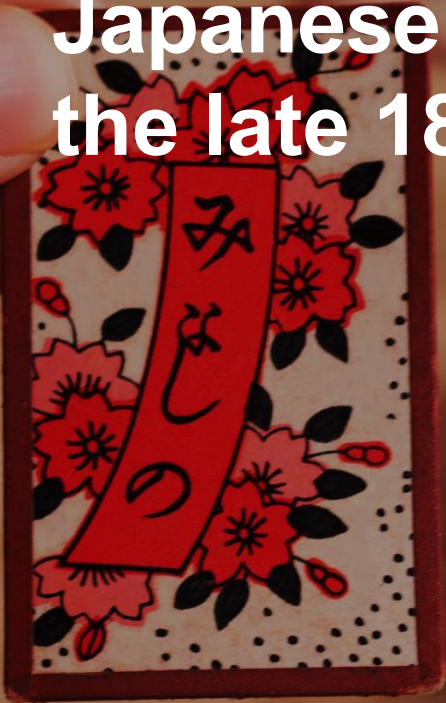
…to today's innovative video game market leader?

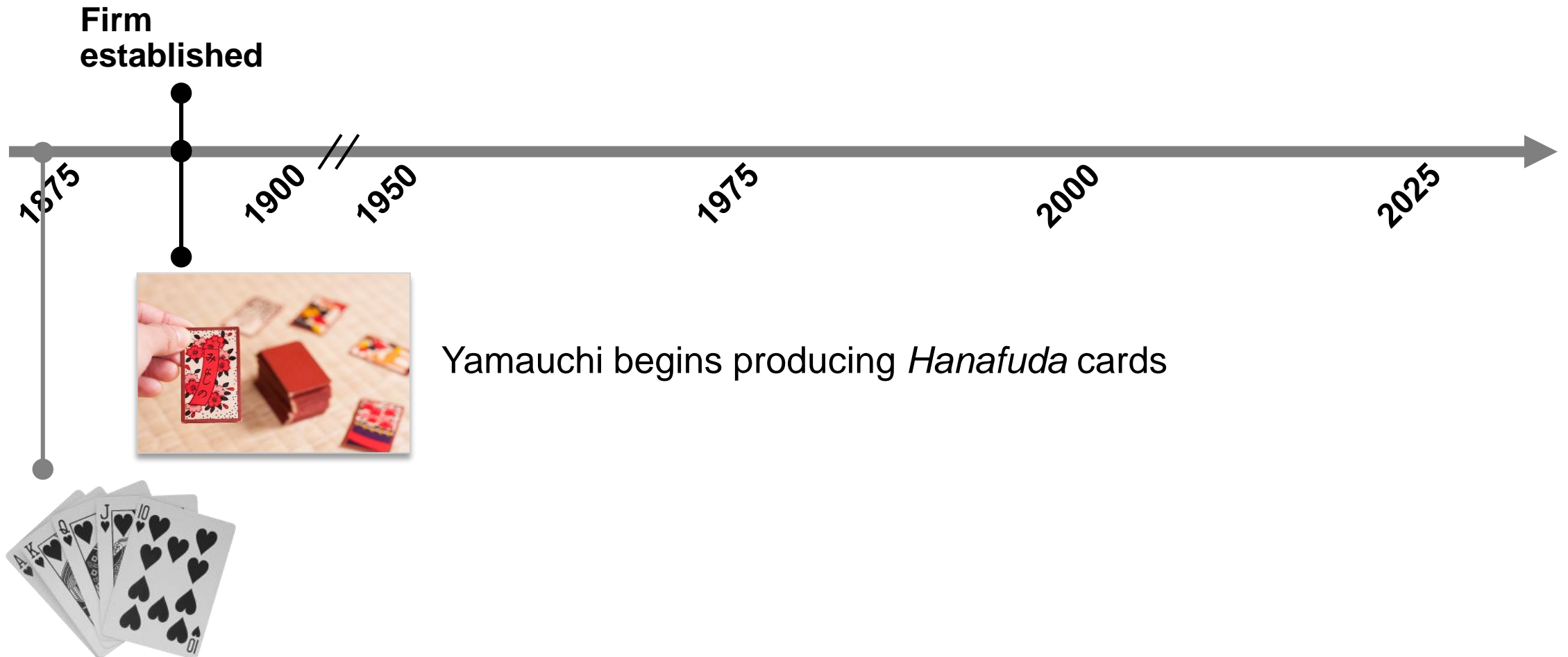Images: Nintendo

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Birth and metamorphosis of a company

PLAYING CARD TRIVIA:

Dutch brought playing cards into Japan in 1550s

Banned in 1630s; led to use in underground gambling

Meije reverse 200+ year ban

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Birth and metamorphosis of a company

Firm established

1875   1900   1950   1975   2000   2025

Yamauchi begins producing *Hanafuda* cards

Birth and metamorphosis of a company

Firm established

Alley games

1875   1900 // 1950   1975   2000   2025

Develops "laser skeet shooting" alley

Birth and metamorphosis of a company

Firm established

Alley games

Mechanical video game

1875   1900   1950   1975   2000   2025

Handheld TV-Game 6 tennis games

Birth and metamorphosis of a company

Firm established

Alley games

Mechanical video game

Arcade games

1875   1900 // 1950   1975   2000   2025

"Donkey Kong" released

Birth and metamorphosis of a company

Firm established · 1875

1900 // 1950

Alley games · **Mechanical video game** · 1975

Arcade games

Home video games · 2000 · 2025

Famicom released ($100, 52 colors)

Birth and metamorphosis of a company

Firm established

Alley games

Mechanical video game

Arcade games

Home video games

Next gen video games

1875 1900 1950 1975 2000 2025

Nintendo Entertainment System

Nintendo DS, Wii, 3DS, Switch

Online games

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How did Nintendo transform from prod[...] Japanese playing [...] the late 1800s...
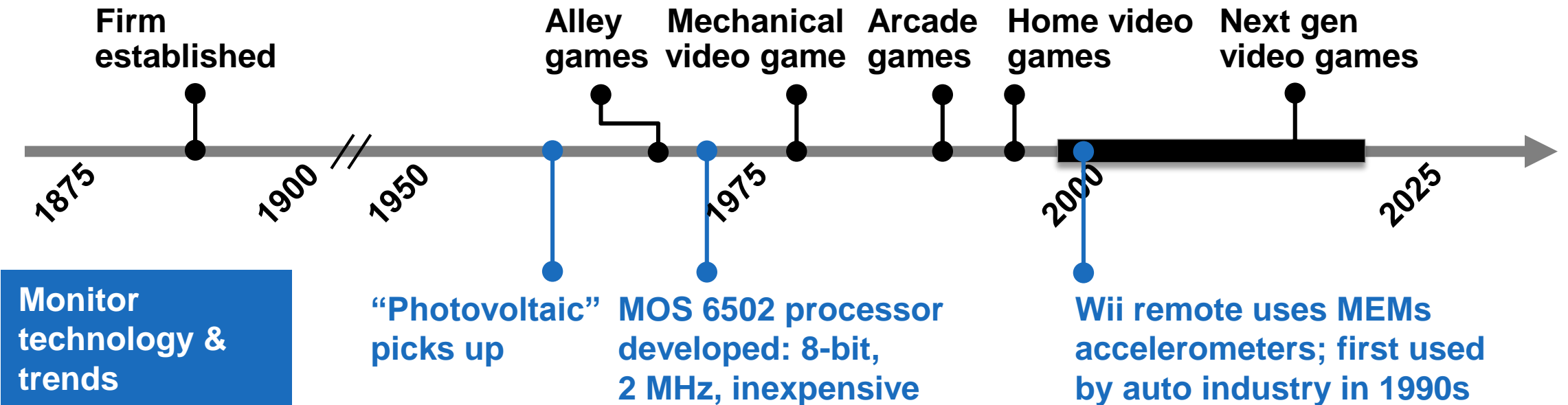
How did Nintendo achieve this digital transformation?

[...]day's innovative [...] game market [...]der?

Images: Nintendo

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Birth and metamorphosis of a company
Monitor technology trends in adjacent and far-flung areas

Firm established

Alley games

Mechanical video game

Arcade games

Home video games

Next gen video games

1875   1900   1950   1975   2000   2025

Monitor technology & trends

"Photovoltaic" picks up

MOS 6502 processor developed: 8-bit, 2 MHz, inexpensive

Wii remote uses MEMs accelerometers; first used by auto industry in 1990s

Birth and metamorphosis of a company
Know your core business

Firm established

Alley games

Mechanical video game

Arcade games

Home video games

Next gen video games

1875

1900

1950

1975

2000

2025

Monitor technology & trends

Know your core business

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Nintendo

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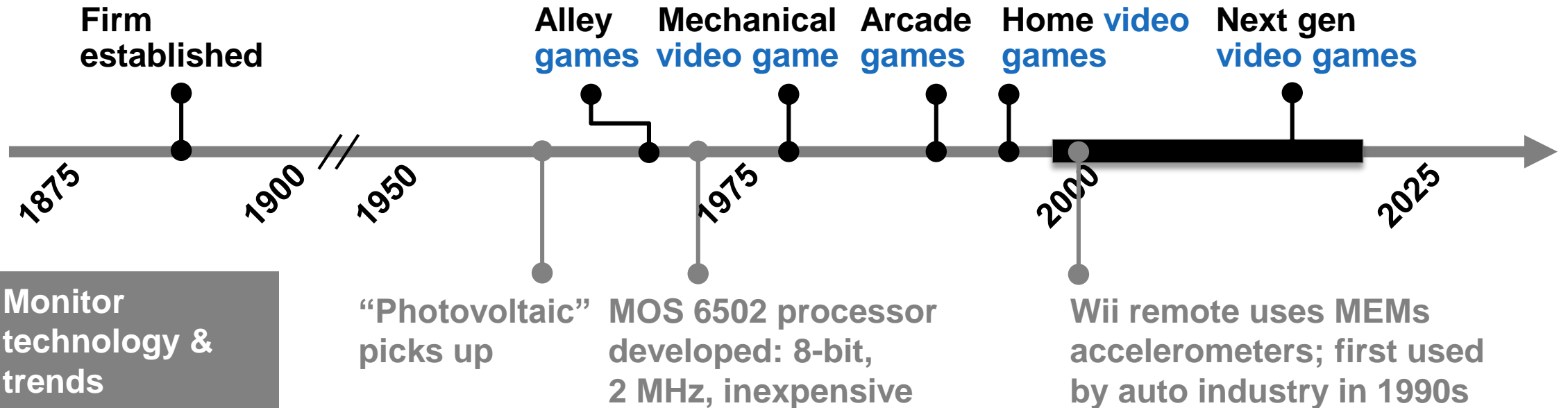
Birth and metamorphosis of a company
As technology evolves, adopt new business models

Firm established

Alley games

Mechanical video game

Arcade games

Home video games

Next gen video games

1875   1900   1950   1975   2000   2025

Monitor technology & trends

Know your core business

Adopt new business models

"Photovoltaic" picks up

MOS 6502 processor developed: 8-bit, 2 MHz, inexpensive

Wii remote uses MEMs accelerometers; first used by auto industry in 1990s

"Pay per play" revenue model

Razor blade (Console-cartridge) model

Paid game knowledge support hotline

Subscription based online gaming

Nintendo

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How did Nintendo transform from prod[...] Japanese playing [...] the late 1800s…

Digital Transformation: Technology + Business Model

[...]day's innovative [...] game market [...]er?

Images: Nintendo

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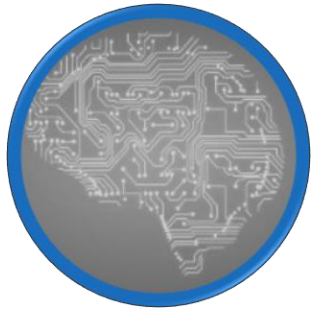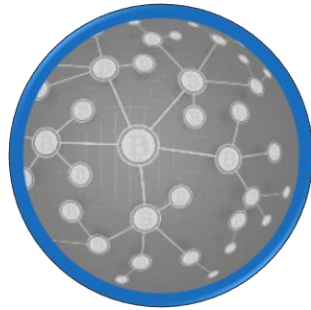
Emerging digital tools will bring a similar transformation to traditional non-tech companies
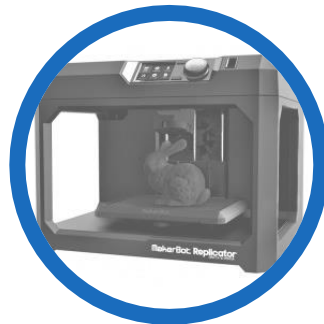
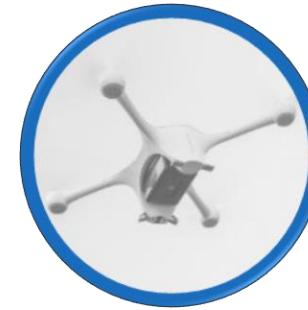## The Digital Toolbox

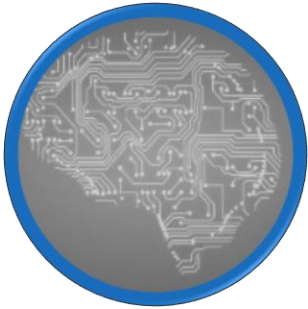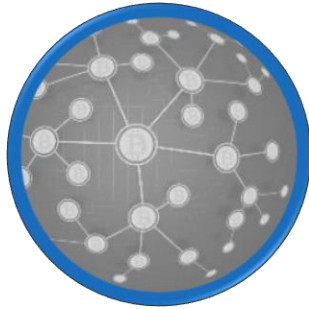AI Blockchain 3D printing AR/VR IIoT Robotics Wearables

Adopting technologies from the digital toolbox without the right business model can lead to costly failures
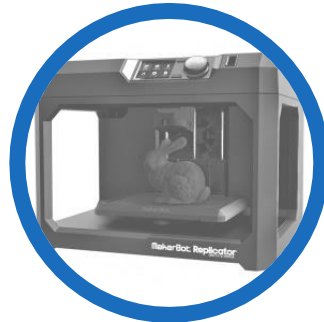
The Digital Toolbox

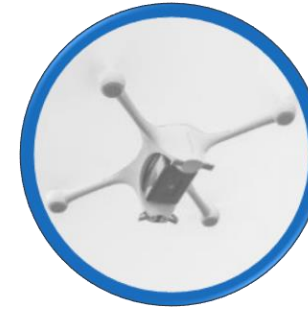AI   Blockchain   3D printing   AR/VR   IIoT   Robotics   Wearables

Applying a technology without the right business model can lead to costly failures

1997   **2007**   **2010**

Netflix is established

Blockbuster acquires Movielink

Required use of specialized hardware and could only stream to PCs and TVs

Blockbuster files for bankruptcy
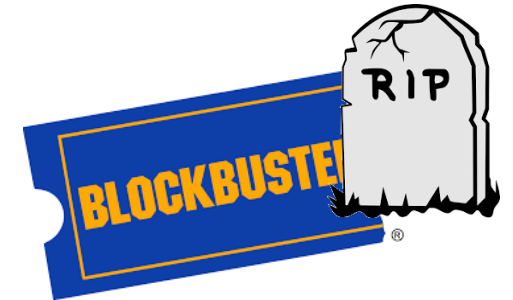
How do I create new business models?

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Digital business model framework:
Aligns with the customer journey in a sale transaction

CUSTOMER JOURNEY

Purchase Decision

Order Placement

Goods & Money Exchange

Post-sale Support

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Digital business model framework:
Aligns with the customer journey in a sale transaction

CUSTOMER JOURNEY	ATTRIBUTE
Purchase Decision	**Decision type**
	Decision makers
	Position in value chain
	Features desired
	Brand
	Pricing
Order Placement	**Sales channel**
	Volume of sale
Goods & Money Exchange	**Payments**
	Logistics & Shipping
Post-sale Support	**Customer support**

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DIMENSIONS

Time

Money

Risk

Customer experience

Agenda

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Applying the business model framework to Nintendo

🕑 **Time**   ⚠️ **Risk**

💲 **Money**   👦 **Customer experience**

CUSTOMER JOURNEY	ATTRIBUTE	Arcade Games
Purchase Decision	**Decision type**	
	Decision makers	
	Position in value chain	
	Features desired	⚠️ 👦
	Brand	
	Pricing	💲 ⚠️
Order Placement	Sales channel	
	Volume of sale	
Goods & Money Exchange	**Payments**	
	Logistics & Shipping	🕑
Post-sale Support	**Customer support**	

Applying the business model framework to Nintendo

🕐 **Time**   ⚠ **Risk**

$ **Money**   👦 **Customer experience**

CUSTOMER JOURNEY	ATTRIBUTE	Arcade games	Home video games
Purchase Decision 👦	**Decision type**		
	Decision makers		
	Position in value chain		
	Features desired	⚠ 👦	🕐 ⚠ 👦
	Brand		
	Pricing	$ ⚠	$
Order Placement	**Sales channel**		
	Volume of sale		
Goods & Money Exchange	**Payments**		
	Logistics & Shipping	🕐	
Post-sale Support	**Customer support**		🕐 👦

Applying the business model framework to Nintendo

Legend: 🕐 Time   ⚠ Risk $ Money   🧑 Customer experience

CUSTOMER JOURNEY	ATTRIBUTE	Arcade games	Home video games	Nintendo Switch
Purchase Decision	Decision type			
	Decision makers			
	Position in value chain			
	Features desired	⚠ 🧑	🕐 ⚠ 🧑	🧑
	Brand			
	Pricing	$ ⚠	$	
Order Placement	Sales channel			
	Volume of sale			
Goods & Money Exchange	Payments			
	Logistics & Shipping	🕐		
Post-sale Support	Customer support		🕐	🧑

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Case study 1: Pharma companies use wearable technologies to automate clinical trial data collection

Key players

Traditional business model

Provide clinical trials service

Partner with clinical providers to recruit patients and collect trial data

Digital transformation

Launched *Patient Sensor Solution,* an end-to-end solution that uses sensors and wearables to securely capture, transmits, stores, and visualizes study subject data

New business model & associated benefits

Directly collect clinical trial data from patients

Reduced cost, 25% decrease in time, better patient retention and compliance

Case study 1: Applying the business model framework

⏱ **Time**   ⚠ **Risk**

$ **Money**   🧒 **Customer experience**

Parexel: Wearables for clinical trials

CUSTOMER JOURNEY	ATTRIBUTE	Parexel: Wearables for clinical trials
Purchase Decision	**Decision type**	
	Decision makers	
	Position in value chain	
	Features desired	⏱ $ ⚠
	Brand	
	Pricing	
Order Placement	Sales channel	
	Volume of sale	
Goods & Money Exchange	Payments	
	Logistics & Shipping	
Post-sale Support	Customer support	

Case study 2: Cleaning services provider uses AR to deliver speedy and cost-effective technical service to customers

Key players

Traditional business model

Sells cleaning products such as chemicals, floor cleaning machines and services

Services include on-site technical support for autonomous floor cleaning machines

Digital transformation

Launched *Internet of Clean* program as part of which the company adopted AR technologies

New business model & associated benefits

AR-enabled remote technical support for autonomous floor cleaning machines

Expected to save about $1.5 million in travel costs annually; could offer new pricing models

Case study 2: Applying the business model framework

🕐 **Time**   ⚠️ **Risk**
💲 **Money**   👩 **Customer experience**

CUSTOMER JOURNEY	ATTRIBUTE	Parexel: Wearables for clinical trials	Diversey: AR tech support
Purchase Decision	**Decision type**		
	Decision makers		
	Position in value chain		
	Features desired	🕐 💲 ⚠️	
	Brand		
	Pricing		
Order Placement	**Sales channel**		
	Volume of sale		
Goods & Money Exchange	**Payments**		
	Logistics & Shipping		
Post-sale Support	**Customer support**		🕐 💲 ⚠️ 👩

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Case study 3: Coffee machine make uses IoT and pay-per-use business model to penetrate low price markets

Key players

relayr.

| Espresso machine manufacturer |

Traditional business model

Sells espresso machines; customers pay per machine

Digital transformation

Used IoT to design connected espresso machines

Developed analytics techniques for preventive maintenance on espresso machines

New business model & associated benefits

Leases espresso machines using a pay-per-coffee pricing model

Also provides predictive maintenance services

Case study 3: Applying the business model framework

Legend	
🕐 Time	⚠️ Risk
💲 Money	👤 Customer experience

CUSTOMER JOURNEY	ATTRIBUTE	Parexel: Wearables for clinical trials	Diversey: AR tech support	Espresso: IoT machines
Purchase Decision	**Decision type**			
	Decision makers			
	Position in value chain			
	Features desired	🕐 💲 ⚠️		
	Brand			
	Pricing			
Order Placement	**Sales channel**			
	Volume of sale			
Goods & Money Exchange	**Payments**			💲 ⚠️
	Logistics & Shipping			
Post-sale Support	**Customer support**		🕐 💲 ⚠️ 👤	🕐 ⚠️ 👤

Case studies: Applying the business model framework

Legend:
- 🕐 Time
- 💲 Money
- ⚠ Risk
- 👩 Customer experience

CUSTOMER JOURNEY	ATTRIBUTE	Parexel: Wearables for clinical trials	Diversey: AR tech support	Espresso: IoT machines
Purchase Decision	**Decision type**			
	Decision makers			
	Position in value chain			
	Features desired	🕐 💲 ⚠		
	Brand			
	Pricing			
Order Placement	**Sales channel**			
	Volume of sale			
Goods & Money Exchange	**Payments**			💲 ⚠
	Logistics & Shipping			
Post-sale Support	**Customer support**		🕐 💲 ⚠ 👩	🕐 ⚠ 👩

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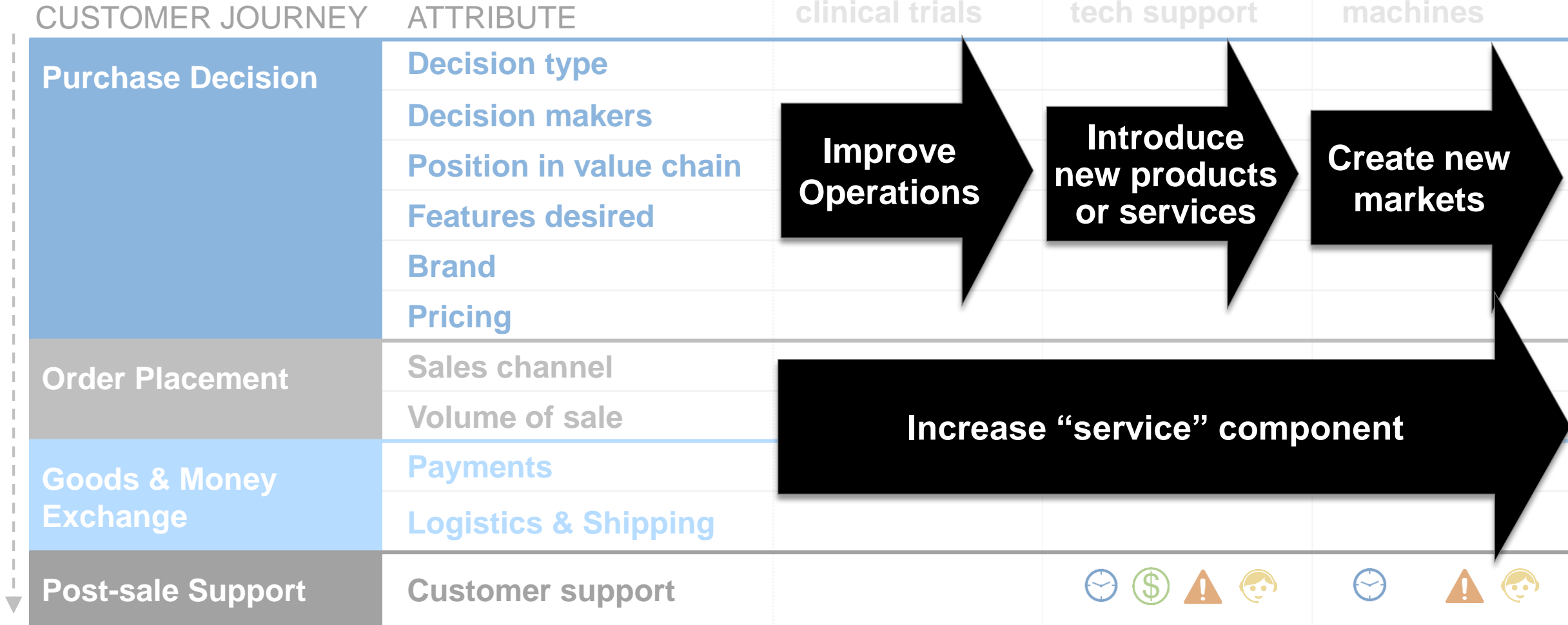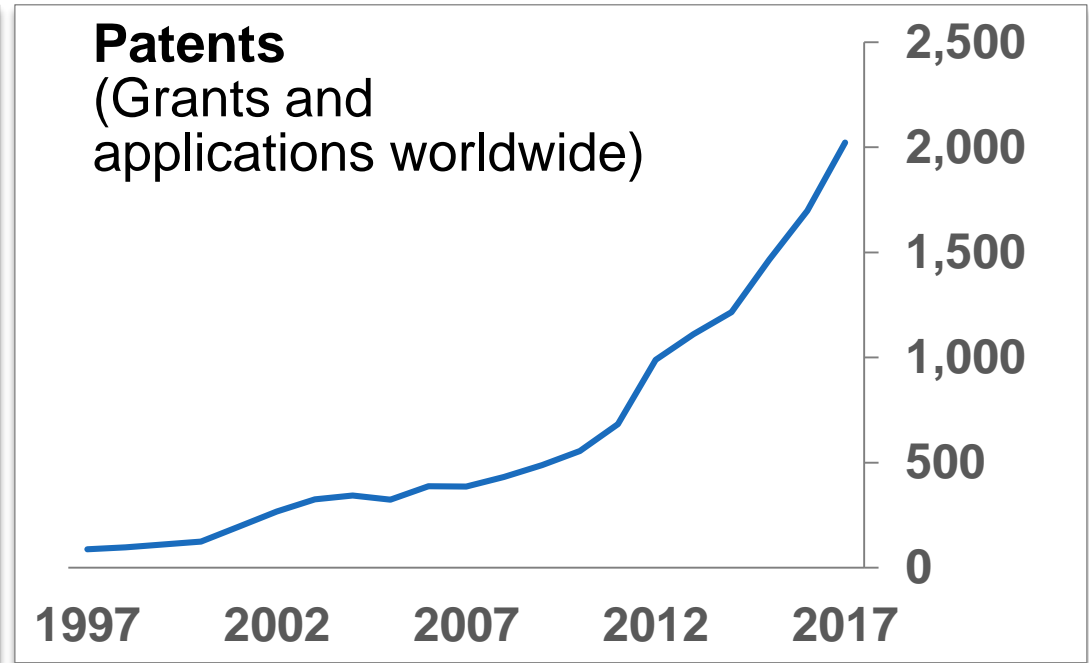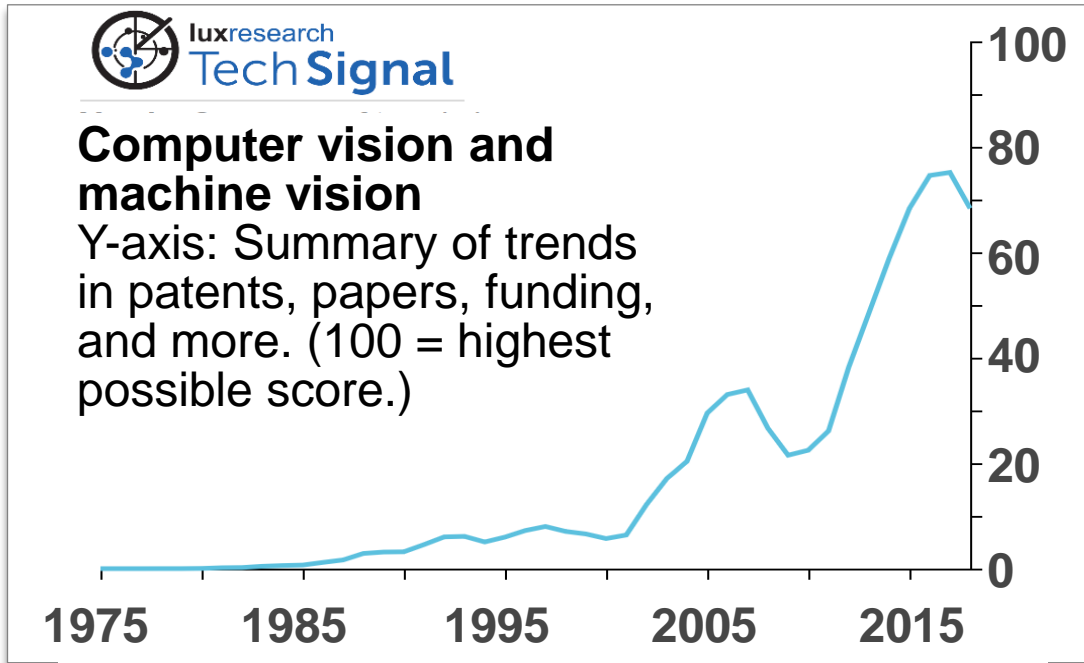# Digital transformation case studies: Lessons learned

🕐 **Time**　　⚠ **Risk**

💲 **Money**　　👧 **Customer experience**

CUSTOMER JOURNEY	ATTRIBUTE	Parexel: Wearables for clinical trials	Diversey: AR tech support	Espresso: IoT machines
Purchase Decision	**Decision type**			
	Decision makers			
	Position in value chain			
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	Pricing			
Order Placement	**Sales channel**			
	Volume of sale			
Goods & Money Exchange	**Payments**			
	Logistics & Shipping			
Post-sale Support	**Customer support**	🕐 💲 ⚠ 👧	🕐 ⚠ 👧	

Improve Operations ➜ **Introduce new products or services** ➜ **Create new markets**

Increase "service" component ➜

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1. Track technology and market trends in adjacent and far-flung areas – computer vision and machine vision example

Computer vision and machine vision
Y-axis: Summary of trends in patents, papers, funding, and more. (100 = highest possible score.)

Patents
(Grants and applications worldwide)

Select Key Players based on IP activity

2. Understand the main sources of transactional friction for your company

CUSTOMER JOURNEY	ATTRIBUTE
Purchase Decision	**Decision type**
	Decision makers
	Position in value chain
	Features desired
	Brand
	Pricing
Order Placement	**Sales channel**
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Goods & Money Exchange	**Payments**
	Logistics & Shipping
Post-sale Support	**Customer support**

DIMENSIONS

Time Money

Risk Customer experience

How can I monetize data?

How can I move to a more service-oriented business model?

What new products or services can I offer?

What new markets can I create?

3. Determine the right digital tools to adopt

The Digital Toolbox
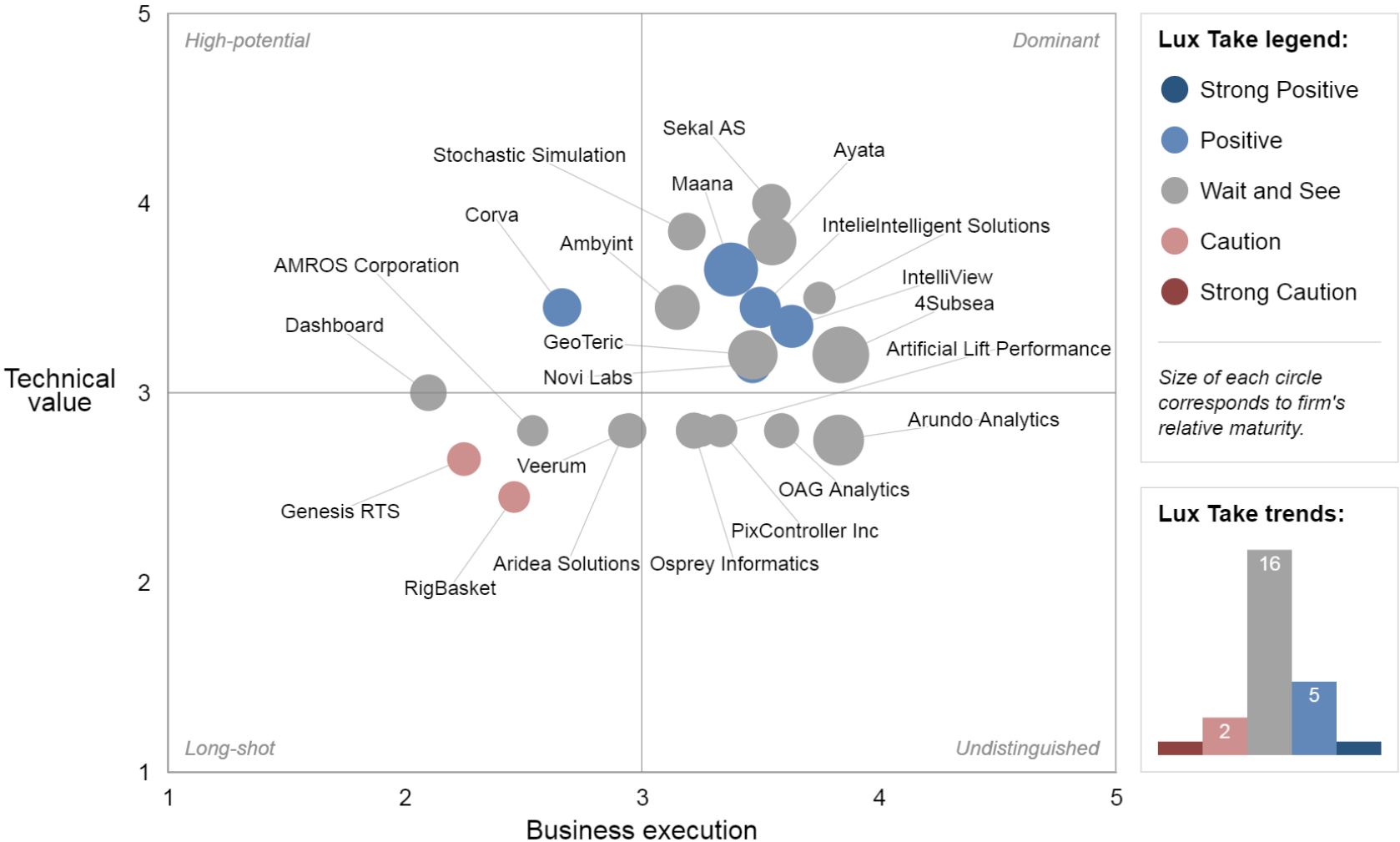
AI   Blockchain   3D printing   AR/VR   IIoT   Robotics   Wearables

4. Identify the right vendors to work with

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How did Nintendo transform from prod[uct] Japanese playing [cards in] the late 1800s…

Roll out your new digital business model

[to]day's innovative [video] game market [lea]der?

Images: Nintendo

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Thank you for joining us.

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