Entrepreneurship II - Scalability

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ENGR 401 Professional Practice

Notices

- This week's workshop is for starting P3 (group project)

  - Wed 9 am

  - Please make sure you attend

- Assignment 1 is marked

- Feedback from Paul - re Prototyping form.

- 2024 Tech Careers Expo | Alan MacDiarmid Foyer | Wed 1 MAY 12p to 2pm

**The Positives:** Innovation & Entrepreneurs - The Vision and Passion.

While innovation matters, it doesn't happen automatically, it can be driven by entrepreneurship, a mixture of:

- vision
- passion
- energy
- enthusiasm
- insight
- judgement

"If you are working on something exciting that you really care about, you don't have to be **pushed**.

The vision **pulls** you."

-Steve Jobs.
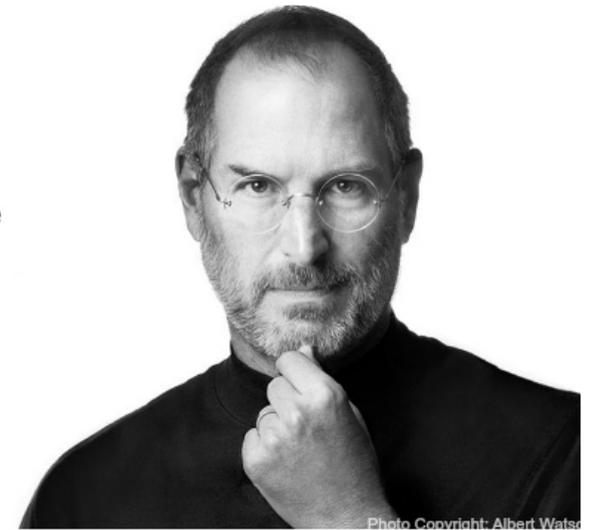
Photo Copyright: Albert Watson

and **plain hard work** which enables good ideas become reality.
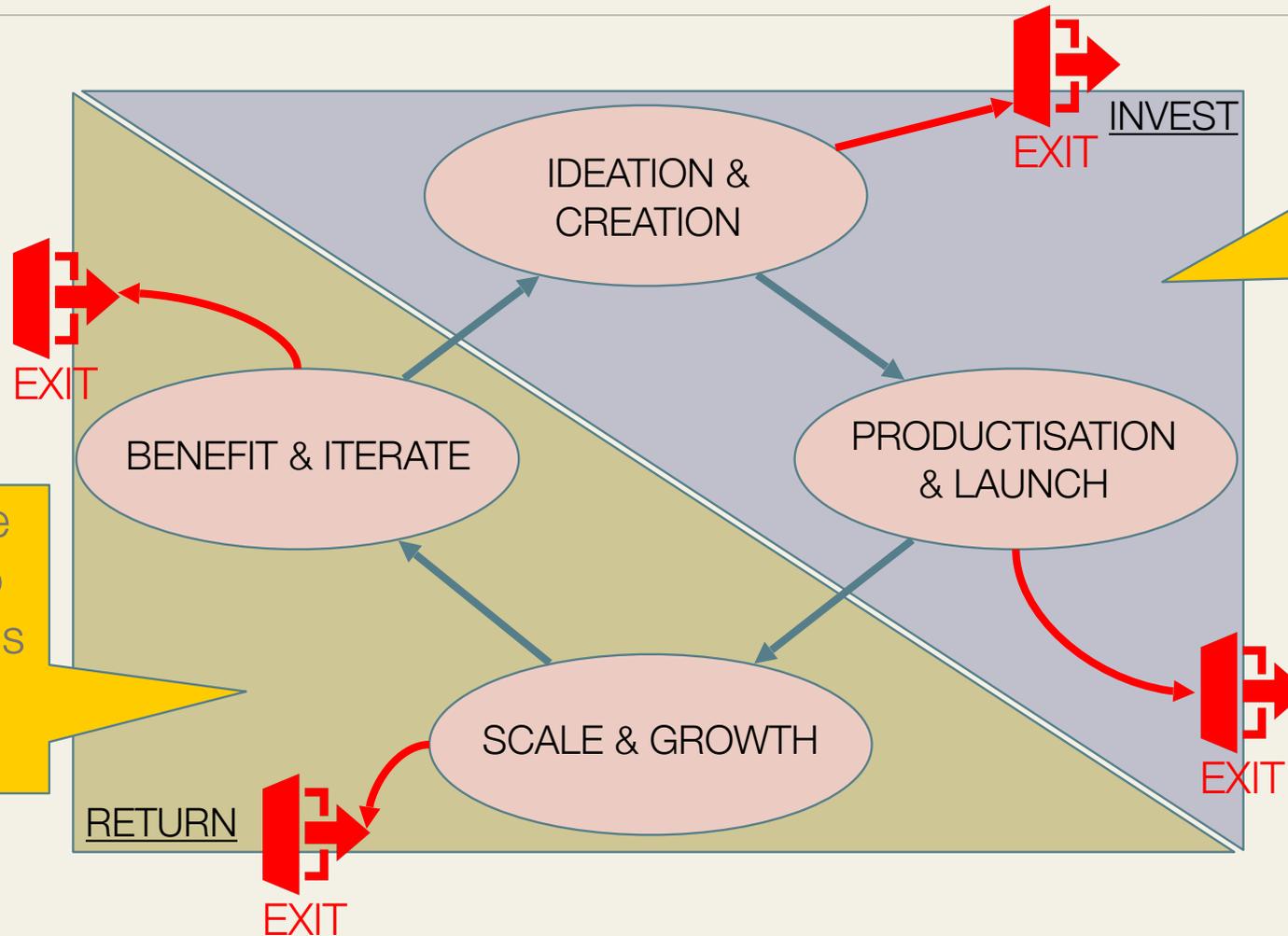
Drucker's Five Principles of Innovation and Entrepreneurship

Principle 1

"Purposeful, systematic innovation begins with the analysis of the opportunities. It begins with thinking through…the sources of innovative **opportunities**."
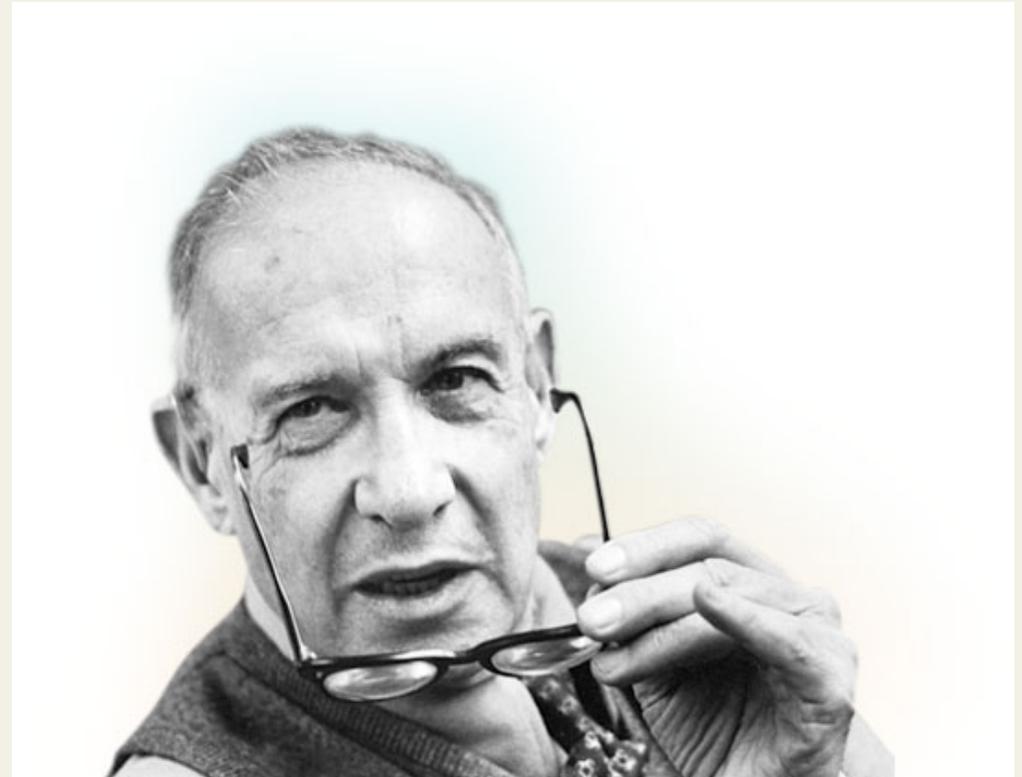
# Drucker's Five Principles of Innovation and Entrepreneurship

Principle 2

"Innovation is both conceptual and perceptual… Successful innovators… look at figures, and they look at people. They work out **analytically** what the innovation has to be to satisfy an opportunity. And then they go out and look at the **customers**, the users, to see what their expectations, their values, their **needs** are."
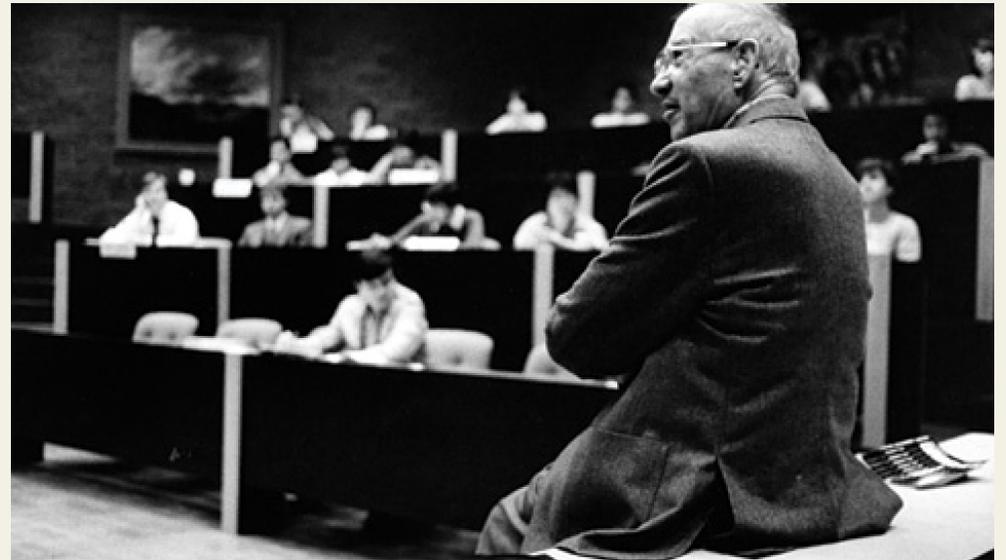
The Drucker Institute, Claremont Graduate University

Drucker's Five Principles of Innovation and Entrepreneurship

Principle 3

"An innovation, to be effective, has to be simple and it has to be **focused**. It should do only one thing, otherwise it confuses. All effective innovations are breathtakingly simple. Indeed, the greatest praise an innovation can receive is for people to say: 'This is obvious. Why didn't I think of it?'"
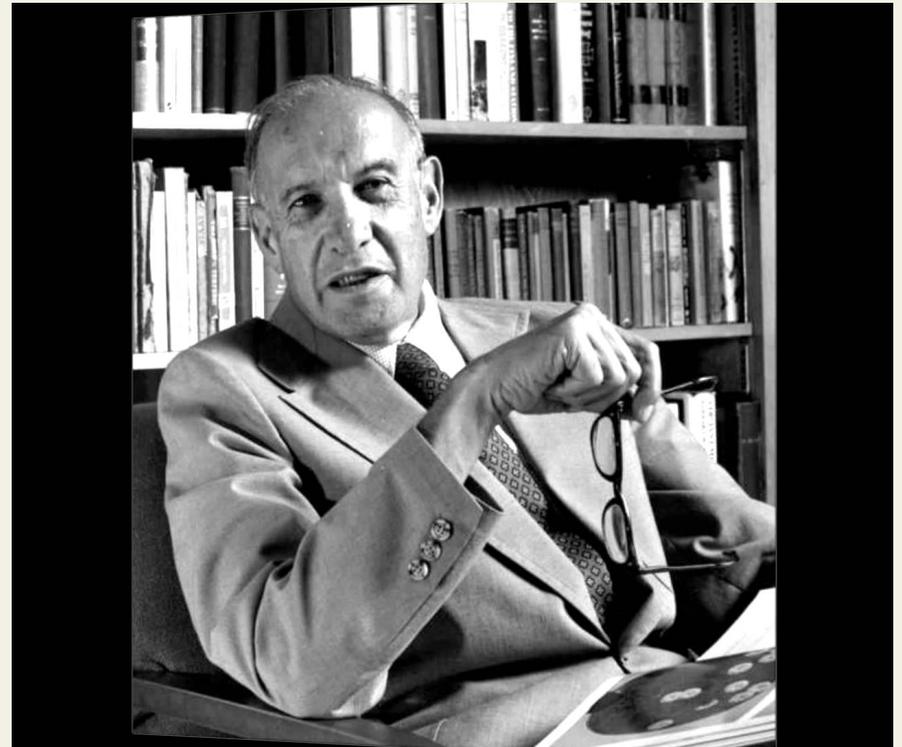
Drucker's Five Principles of Innovation and Entrepreneurship

Principle 4

"Effective innovations **start** small... They try to do one specific thing"
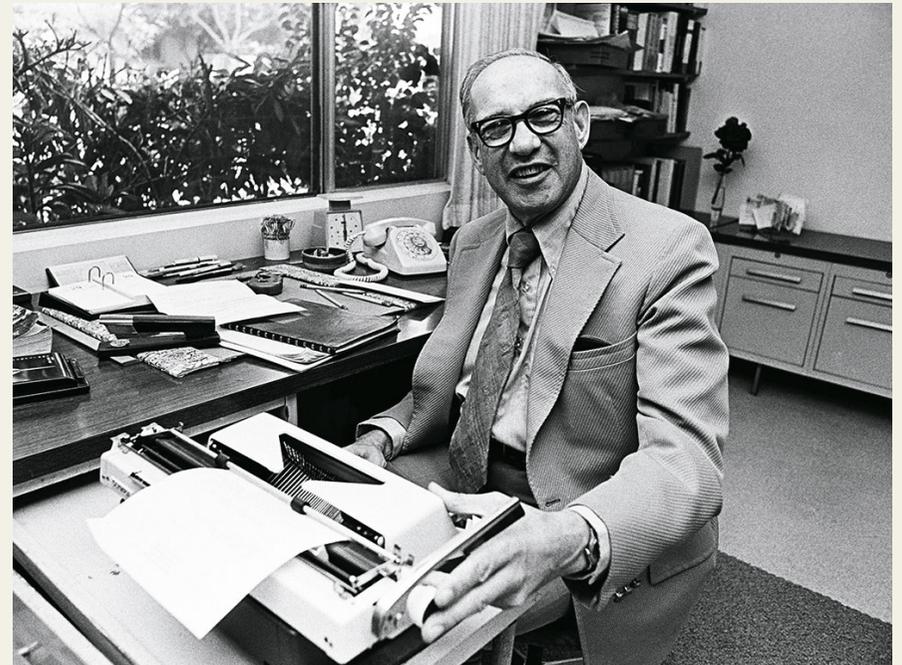
Drucker's Five Principles of Innovation and Entrepreneurship

Principle 5

"A successful innovation aims at **leadership** [within a given market or industry]… If an innovation does not aim at leadership from the beginning, it is unlikely to be innovative enough, and therefore unlikely to be capable of establishing itself."
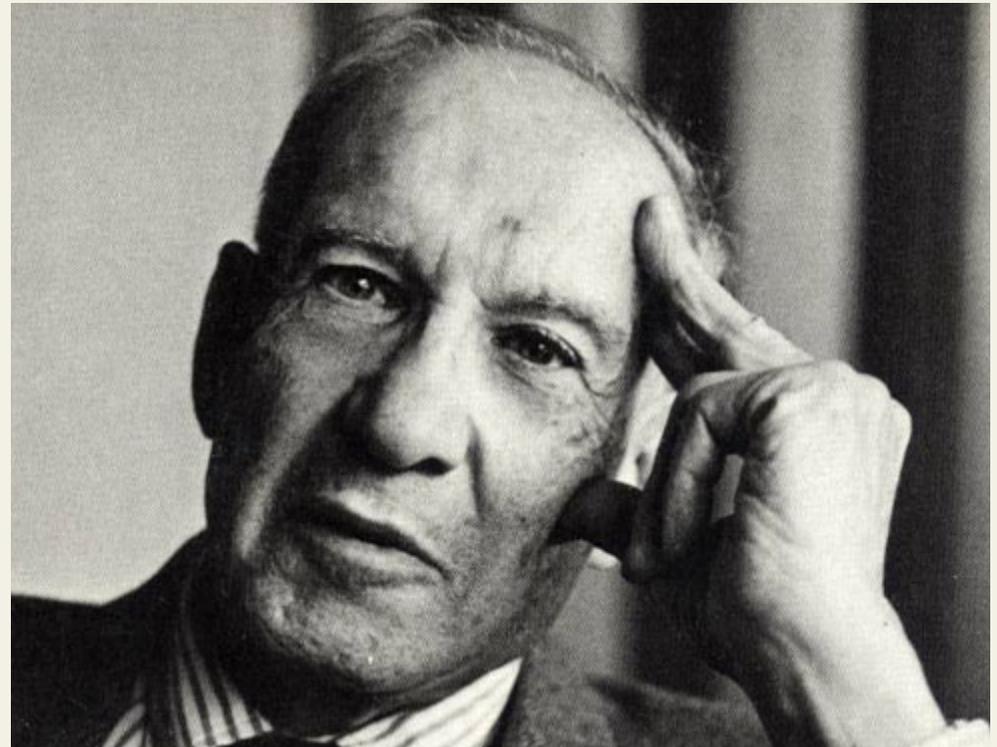
Can we measure innovation - with a calculator?

https://www.bcg.com/capabilities/innovation-strategy-delivery/innovation-benchmarking-tool

The 50 Most Innovative Companies of 2023

Ranking										
1–10	**1** Apple	**2** Tesla (+3)	**3** Amazon	**4** Alphabet	**5** Microsoft (-3)	**6** Moderna (+1)	**7** Samsung (-1)	**8** Huawei	**9** BYD Company	**10** Siemens (+10)
11–20	Pfizer (+7)	J&J (+15)	SpaceX	Nvidia (+1)	ExxonMobil	Meta (-5)	Nike (-5)	IBM (-8)	3M (+18)	Tata Group
21–30	Roche	Oracle (-3)	BioNTech	Shell	Schneider Electric	P&G (+8)	Nestlé (+22)	General Electric (+1)	Xiaomi (+2)	Honeywell
31–40	Sony (-22)	Sinopec	Hitachi (+6)	McDonald's	Merck	ByteDance	Bosch (-11)	Dell (-24)	Glencore	Stripe
41–50	Saudi Aramco	Coca-Cola (-6)	Mercedes-Benz Group[1]	Alibaba (-22)	Walmart (-32)	PetroChina	NTT	Lenovo (-24)	BMW	Unilever

xxx - Return   xxx - New entrant

https://www.bcg.com/publications/most-innovative-companies-historical-rankings

The Challenges: Innovation & Entrepreneurs - Why Start-ups Fail

- Most start-ups don't succeed.

  - More than two-thirds of them never deliver a positive return to investors…

  - …why do so many end disappointingly?

https://hbr.org/2021/05/why-start-ups-fail

Why Start-ups Fail

SCALING!

- Two (of 6) *avoidable* reasons (according to Tom Eisenmann)

  - **False positives (Drucker's principle 2)**

    - Early-stage entrepreneurs often misinterpret signals about market demand - mainstream customers may have needs that differ from those of the **enthusiastic** early adopters.

    - The start-up may have to reengineer its product and reeducate the market. Those efforts can be costly and consume scarce capital, boosting the odds of failure.

  - **Speed traps (perhaps Drucker's principle 5)**

    - The start-up eventually saturates its original target market, so growth then requires broadening its customer base to new segments.

    - To keep growing, the firm must spend heavily on customer acquisition. Meanwhile, the start-up's rapid growth attracts rivals that cut prices and pour money into promotions. At some point **new customers begin to cost more to acquire than they're worth**.

https://hbr.org/2021/05/why-start-ups-fail

Barriers to Scaling

- Operational Complexity

- Cash Flow Management

- Talent Acquisition & Retention

- Brand Consistency & Identity

- Competition

- Compliance

- **Supply Chain Management:** sourcing materials, managing inventory, and coordinating with suppliers and distributors.

- **Production Scaling:** significant planning and investment in plant or with - while maintaining quality.

- **Logistics and Delivery:** expanding distribution channels and improving logistics to ensure timely delivery of products or services.

- **Multi-Region Management & Logistics:** the specific complexity of managing multiple different organisation sites

- **Workforce Management:** managing a larger workforce becomes complex. This includes hiring and training employees, managing performance, and compliance with labor laws and regulations.

- **Tech Infrastructure*:** upgrading IT systems, adopting automation, and integrating new software and tools.

Barriers to Scaling

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- **Increased Expenses:** investing in new equipment, inventory, personnel, and other resources. These expenses can add up faster than cash flow and strain a company's cash reserves.

- **Longer Payment Cycles**: As a business grows, its payment cycles may lengthen. For example, larger customers may demand longer payment terms, which can delay cash inflows.

- **Inventory Management**: the need to stock enough inventory to meet demand without the risk of overstocking and tying up cash in unsold goods.

- **Working Capital Management:** funding day-to-day operations, such as payroll, rent, and utilities.

Barriers to Scaling

- Operational Complexity

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- Competition

- Compliance

- **Competition** for top talent can be fierce, and entrepreneurs may struggle to find candidates with the right skills and experience.

- Rapid growth can be **stressful** for employees and startups may struggle to retain key staff, disrupting operations and resulting in **loss of institutional knowledge.**

- Providing adequate **training** and professional development opportunities can be challenging during rapid growth.

- Rapid growth can put pressure on a company's culture, as new employees can lead to a **shift in values.**

Barriers to Scaling

- Operational Complexity

- Cash Flow Management

- Talent Acquisition & Retention

- **Brand Consistency & Identity**

- Competition

- Compliance

- Ensure the brand's **visual elements**, such as logos, colours, fonts, and imagery, are used consistently across packaging, marketing materials, and digital platforms.

- **Consistent quality** and performance across your product lines, as inconsistencies damage reputation and erode customer trust.

- Provide a **consistent customer** experience, from in-store interactions to online communications. This includes maintaining consistent policies, procedures, and service standards.

- Maintain a **consistent company** culture that attracts and retain employees who deliver the 'right' customer experience.

Barriers to Scaling

- Operational Complexity

- Cash Flow Management

- Talent Acquisition & Retention

- Brand Consistency & Identity

- **Competition**

- Compliance

- A successful growth business will attract **new competitors** to the market, making it difficult to maintain market share and growth.

- Increased competition can lead to **price wars**, as businesses try to undercut each other, eroding profit margins.

- Innovation and product improvement (speed traps), requires significant **investment** in research and development, which can be challenging with **limited** resources*.

- Businesses must work harder to maintain customer loyalty - requiring **additional investment** in marketing, customer service, and other customer retention strategies*.

- Established businesses ideally (for them) create **barriers to entry**, such as exclusive contracts, patents or economies of scale, that make it difficult for new competitors to enter the market (a moat).

Building a Moat.

- A moat is seen as a 'good thing' by investors, but reduces competition and potentially innovation. This eliminates point 1 on the previous slide. Identifying moats can be an important part of scaling a business:

  - **Intellectual Property:** Patents, copyrights, and other forms of intellectual property can provide a legal moat that prevents competitors from copying a business's products or services.

  - **Network Effects:** A network effect occurs when the value of a product or service increases as more people use it. (social media, dating apps).

  - **Economies of Scale:** Large businesses often have lower costs per unit of production due to their size, which can make it difficult for smaller competitors to enter the market.

  - **Brand Loyalty:** Established brands with strong customer loyalty or eco-systems can create a powerful moat that is difficult for competitors to overcome.

  - **Switching Costs:** If it is difficult or expensive for customers to switch to a competitor's product or service, this can create a moat that protects the business's market share.

Barriers to Scaling

- Operational Complexity

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- Public (All of Government Regulations & Procedures)

- Private (Applicable general laws, Privacy Act, etc)

- Industry Segment (PCI/SOX, EngineeringNZ Regulations, etc)

Cloud changes the (Software) landscape

- Cloud addresses (at least in part):

  - **Operational Complexity:** production scaling, delivery, multiple regions, workforce management (fire your datacenter team), and of course, tech Infrastructure - tools, libraries, services, platforms.

  - **Cashflow Management:** trades CAPEX for OPEX, inventory - elasticity, working capital - pay per use.

  - **Compliance**: Cloud makes it easier for SW to be kept up to date, general security and encryption are taken care of by experts, locality requirements can be met by regions, disaster recovery and business continuity, comprehensive logging and auditing tools.

- Cloud reduces (at least in part):

  - **Competition:** with fewer barriers to competition, scale, regionality, the need to build physical infrastructure, the Cloud can increase competition and remove some moats.*

Clouds Evolution (as a business)

- 3 types of scaling, we started with:

  - Big compute, then,

  - Big Data, and now

  - Big ML/AI

    - *Amazon Web Services, Inc., today announced the general availability of Amazon Elastic Compute Cloud (EC2) Capacity Blocks for ML, an industry-first consumption model that enables any customer to access highly sought-after GPU compute capacity to run their short duration machine learning (ML) workloads. - Nov 2023*

    - *https://aws.amazon.com/blogs/compute/generative-ai-infrastructure-at-aws/*

Does AI/ML mean we are entering an era of Cloud 2.0?

- Amazon dominated the first cloud era.

- Has the AI boom finally kicked off Cloud 2.0?

    - https://www.businessinsider.com/amazon-nvidia-cloud-ai-anthropic-2023-10

- What does Cloud 2.0 even mean?

Scale Case Study || Juul

- Started with good intent - replace cigarettes with a less harmful alternative.

- Lost the message they were trying to promote, buy choosing some ill-considered advertising routes:

  - Social media influencer campaign, a brilliant viral marketing move - with a competition to appear on the times square billboards.

  - Juul-branded shipping containers popped up at concerts, clubs and rooftop bars, beckoning people inside with bright colors and the promise of free products.

    - The cargo containers featured a lounge area; an "animated GIF booth" where people could pose for the camera; and

    - a "flavor bar" where guests could try tobacco, mint, fruit or 'special' Juul pods.

  - Problems with the customers that ended up adopting their product (teens and children)…

    …but some of the social media posts coming in after sampling events made certain executives uneasy. "I would catch myself saying, 'Wow, they look really young,'"

- Perception changed, and JuuL took what were considered insufficient proactive steps to address

  - "They had the Silicon Valley mindset of 'We're a tech company; we're not a tobacco company,'"

- Got essentially "regulated to death"

https://time.com/6048234/juul-downfall/   Netfllix Documentary Big Vape: The Rise and Fall of Juul

Scale and Ethics

- Ethical companies can be seen as more challenging to scale, and more exposed to criticism - at least in the short term.

- Ben & Jerry's is positions itself as an ethical and sustainable company

We believe that ice cream can change the world. We have a progressive, nonpartisan social mission that seeks to meet human needs and eliminate injustices in our local, national, and international communities by integrating these concerns in our day-to-day business activities.

- Our Values, Activism and Mission, https://www.benjerry.com/values

- DISCUSS ☺

Scale and Ethics - some thoughts about positioning.

- Greenwashing,

- bluewashing,

- pinkwashing,

- purplewashing,

- redwashing, etc