Cybersecurity as a Competitive Advantage

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Guiding Question

How can organizations use cybersecurity
to gain a competitive advantage?

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Discussion

What is your experience?

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Research Motivation

- Cybersecurity is seen as an infrastructure investment, instead of an integral part of business, resulting in technical approaches instead of strategy approaches.

- When cybersecurity is perceived from a risk perspective it is seen as a cost of doing business. If cybersecurity were to be viewed from a business perspective, it could create a competitive advantage.

- Today when cybersecurity is considered as a business opportunity, it is driven by customer demand.

- This research explores how to leverage cybersecurity and create a competitive advantage.

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Initial Proposition

Strategy frameworks can be applied to cybersecurity to identify opportunities for competitive advantage.

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Method: Evaluate Two Complementary Frameworks

- Michael Porter's and Victor Miller's approach on **How Information Gives You Competitive Advantage**[1].
  - Porter analyzed this problem for **Information Technology** where parallels can be drawn.
- Michael Cusumano's **Staying Power**[2].
  - Cusumano studies how companies can apply 6 principles to stay in power and maintain a competitive advantage.

1. https://hbr.org/1985/07/how-information-gives-you-competitive-advantage
2. https://www.europeanbusinessreview.com/staying-power-managing-innovation-in-an-uncertain-world/

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Michael Porter: How IT Gives You Competitive Advantage

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Changing the Industry Structure	Altering one of Porter's five competing forces
Giving companies new ways to outperform each other	Lowering production costs or differentiating products with the use of information technology
Spawning new Businesses	Using information technology as a foundation of new businesses

1. https://hbr.org/1985/07/how-information-gives-you-competitive-advantage

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Changing the Industry Structure

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- Changing the Industry Structure refers to altering one or more of Porter's Five Forces.

Bargaining Power of *Suppliers*

Threat of *New Entrants* → (*Industry* Rivalry) ← Threat of *Substitutes*

Bargaining Power of *Buyers*
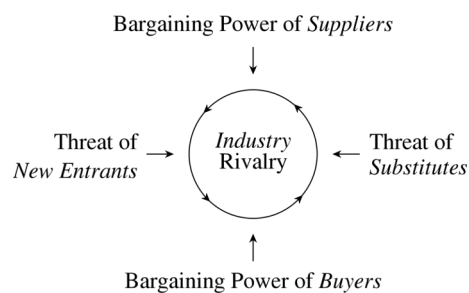
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Changing the Industry Structure

- **Example:** HVAC systems.
- Including built-in cybersecurity in HVAC systems.
  - Built on a secure cloud-based system.
  - Support for security updates.
- This changed customer expectations of similar products.

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Changing the Industry Structure

- **Example:** HVAC system with built-in cybersecurity.

Bargaining Power of *Suppliers*

Industry Rivalry is decreased

Threat of *New Entrants* → *Industry* Rivalry ← Threat of *Substitutes*

Bargaining Power of *Buyers*
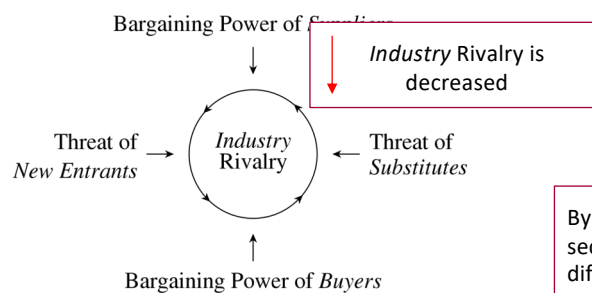
By including built-in cyber security the product differentiates itself from the competition reducing industry rivalry as competition is less fierce.

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Changing the Industry Structure

- **Example:** HVAC system with built-in cybersecurity.

Bargaining Power of *Suppliers*

Threat of *New Entrants* → Industry Rivalry ← Threat of *Substitutes*

Bargaining Power of *Buyers*

Threat of *Substitutes* is decreased
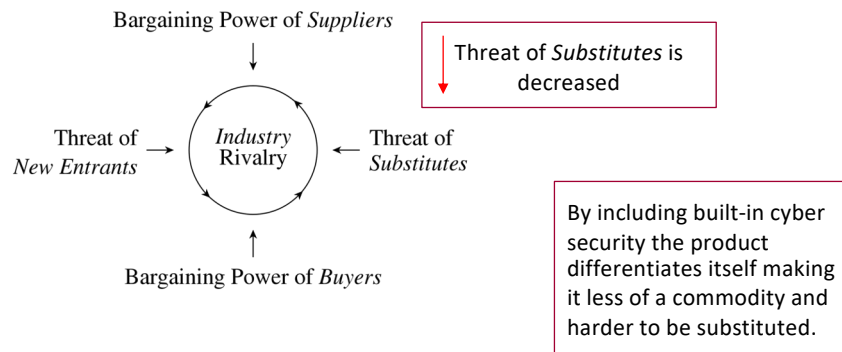
By including built-in cyber security the product differentiates itself making it less of a commodity and harder to be substituted.

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Changing the Industry Structure

- **Example:** Cyber Reliant data protection product.
  - Cyber Reliant is a provider of quantum-secure data and anti-ransomware data protection technology.
  - Lloyd's issued a warranty to Cyber Reliant that protects commercial and institutional purchasers of Cyber Reliant data protection products with coverage of up to $5 million.
- Cyber Reliant could differentiate itself from the competition and diminished the threat of substitutes
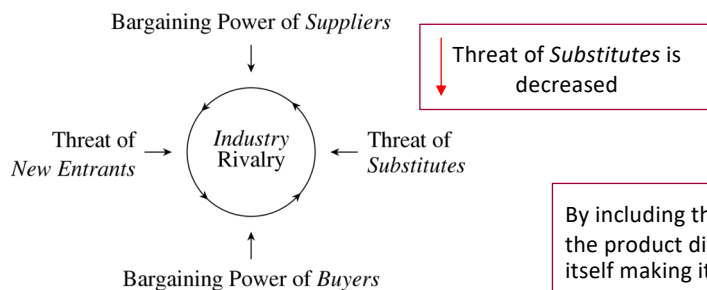
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Changing the Industry Structure

- **Example:** Cyber Reliant's warrantied quantum data protection product.

Bargaining Power of *Suppliers*

Threat of *Substitutes* is decreased

Threat of *New Entrants* → *Industry* Rivalry ← Threat of *Substitutes*

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Bargaining Power of *Buyers*
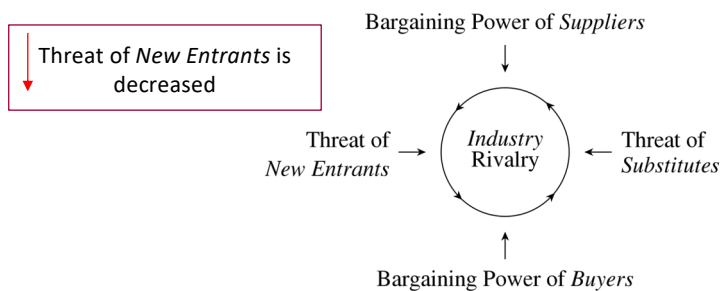
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Changing the Industry Structure

- **Example:** Cyber Reliant's warrantied quantum data protection product.

Bargaining Power of *Suppliers*

Threat of *New Entrants* is decreased

Threat of *New Entrants* → *Industry* Rivalry ← Threat of *Substitutes*

By including the warranty the product is harder to replicate as companies need to find an insurer which reduces the Threat of New Entrants.

Bargaining Power of *Buyers*
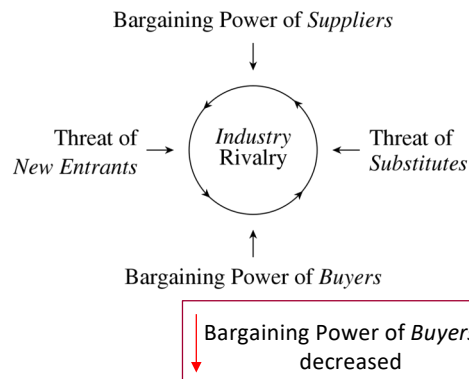
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Changing the Industry Structure

- **Example:** Cyber Reliant's warrantied quantum data protection product.

Bargaining Power of *Suppliers*

↓

Threat of → Industry ← Threat of
New Entrants Rivalry *Substitutes*

↑

Bargaining Power of *Buyers*

Bargaining Power of *Buyers* is decreased

Bargaining power of buyers is decreased as there is only one company offering a similar product.

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Giving Companies New Ways to Outperform Each Other

- Porter mentions that IT can provide new ways to outperform each other.
- This can be in two different ways:
  - Providing a lower cost alternative.
  - Enhancing differentiation.
- This can also be applied to cybersecurity.

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Giving Companies New Ways to Outperform Each Other

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- **Example:** Apple's differentiates itself through cybersecurity.
- Apple iOS 15, for example, bans tracking pixels.
- Apple uses cybersecurity in their advertising.

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Giving Companies New Ways to Outperform Each Other

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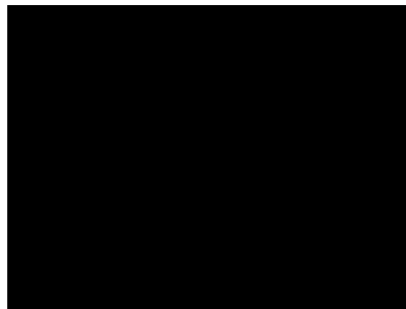
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Spawning New Businesses

- Porter mentions that IT can create new businesses within old ones.
    - Making businesses technologically feasible.
    - Creating derived demand for new products.
    - Creating new businesses within old ones.
- Cybersecurity can fulfill a similar role.
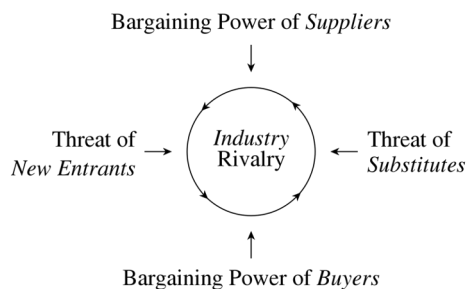
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Spawning New Businesses

- **Example:** Amazon's investment in cybersecurity in their infrastructure lead to the creation of AWS.
- AWS was originally an internal tool.
- Its scalability and cybersecurity allowed Amazon to sell it as infrastructure as a service.

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Discussion

Bargaining Power of *Suppliers*

Threat of → (*Industry* Rivalry) ← Threat of
New Entrants   *Substitutes*

Bargaining Power of *Buyers*

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Cusumano's Staying Power

6 Principles of Staying Power
Platforms, not just products
Services, not just products
Capabilities, not just strategy
Pull, don't just push
Scope, not just scale
Flexibility, not just efficiency

1. https://www.europeanbusinessreview.com/staying-power-managing-innovation-in-an-uncertain-world/

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Principle: Platforms, Not Just Products

- In many markets today, companies need to think in terms of platforms, not just stand-alone isolated products.
- Firms should go beyond developing a product strategy and create a platform strategy.
- Products should be at the center of an ecosystem of companies building applications or services around it.

Platforms, not just products
Services, not just products
Capabilities, not just strategy
Pull, don't just push
Scope, not just scale
Flexibility, not just efficiency

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Example: Platforms, Not Just Products

- **Example:** Apple's App Store versus Google's Play Store.
- Apple's App Store has a more secure review process.
- This led to the company having a stronger ecosystem than Google with their Play Store.
- Investing in cybersecurity let Apple have a stronger platform.

Platforms, not just products
Services, not just products
Capabilities, not just strategy
Pull, don't just push
Scope, not just scale
Flexibility, not just efficiency

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Principle: Services, Not Just Products

- The importance of the role of services in the lifecycle and competitive strategies of product companies.

- Including services helps fight commoditization of products.

- It also generates an extra revenue stream.

Platforms, not just products
Services, not just products
Capabilities, not just strategy
Pull, don't just push
Scope, not just scale
Flexibility, not just efficiency

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Example: Services, Not Just Products

- **Example:** Hardware products that include cybersecurity services.

- At an industrial company different hardware products include cybersecurity services.

  - These are assessments and patches.

- These create lock in and an extra revenue stream.

Platforms, not just products
Services, not just products
Capabilities, not just strategy
Pull, don't just push
Scope, not just scale
Flexibility, not just efficiency

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Principle: Capabilities, Not Just Strategy

- Managers need to think in terms of capabilities, not just strategy or strategic planning.

- They should be building strategy on top of distinctive capabilities.

- Strategies need to change over time, but more enduring are the unique skills and knowledge that enable a company do things that competitors cannot easily do.

Platforms, not just products
Services, not just products
Capabilities, not just strategy
Pull, don't just push
Scope, not just scale
Flexibility, not just efficiency

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Example: Capabilities, Not Just Strategy

- **Example:** Signal's core capability in security.

- Signal is a messaging app from India that made secure messaging their capability.

- They built their strategy on top of this capability.

- After Whatsapp had a security breach, there was more demand for a secure messaging platform so people began migrating to Signal.

Platforms, not just products
Services, not just products
Capabilities, not just strategy
Pull, don't just push
Scope, not just scale
Flexibility, not just efficiency

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Principle: Pull, Don't Just Push

- "Pull, Don't Just Push," is about creating real-time linkages to customers and different sources of market information.

- This is instead of just forcing out products and technologies to the market according to preset plans.

Platforms, not just products
Services, not just products
Capabilities, not just strategy
Pull, don't just push
Scope, not just scale
Flexibility, not just efficiency

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Example: Pull, Don't Just Push

- **Example:** Slack's fast input from users when the pandemic hit.

- With more people working at home organizations demanded better security.

- Slack enhanced their security by giving firms more visibility and control of their data.

Platforms, not just products
Services, not just products
Capabilities, not just strategy
Pull, don't just push
Scope, not just scale
Flexibility, not just efficiency

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Principle: Scope, Not Just Scale

- Companies need to be able to efficiently deliver several products, not just a single one.

- Companies need to leverage knowledge in order to efficiently provide different products.

Platforms, not just products
Services, not just products
Capabilities, not just strategy
Pull, don't just push
Scope, not just scale
Flexibility, not just efficiency

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Example: Scope, Not Just Scale

- **Example:** Jotforms cybersecurity use across all its platforms.

- It shares its high level of cybersecurity for all its products.

- In that way they are available to provide a wide range of products with high levels of cybersecurity efficiently.

Platforms, not just products
Services, not just products
Capabilities, not just strategy
Pull, don't just push
Scope, not just scale
Flexibility, not just efficiency

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Principle: Flexibility, Not Just Efficiency

- In an ever changing world companies need to focus in flexibility as well as efficiency.

- In order to thrive and survive over long periods of time, companies need to prepare for different scenarios and cultivate.

- Companies need to have the ability to deal quickly with change and unexpected situations.

Platforms, not just products
Services, not just products
Capabilities, not just strategy
Pull, don't just push
Scope, not just scale
Flexibility, not just efficiency

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Example: Flexibility, Not Just Efficiency

- **Example:** Zoom rapid change when more security was needed.

- Zoom was attacked during the first days of the pandemic.

- Thanks to its investment in cybersecurity it was possible to for the company to immediately improve and provide a better service.

Platforms, not just products
Services, not just products
Capabilities, not just strategy
Pull, don't just push
Scope, not just scale
Flexibility, not just efficiency

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Staying Power Applied to Cybersecurity

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Cusumano's Principle	Example	Staying Power from Cybersecurity
Platforms, not just products	Apple App Store	High
Services, not just products	Hardware products with cybersecurity services	High
Capabilities, not just strategy	Signal core capability in security	High
Pull, don't just push	Slack rapid feedback	Low
Scope, not just scale	Jotforms use of cybersecurity	Medium
Flexibility, not just efficiency	Zoom rapid ability to adapt	Medium

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Discussion

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6 Principles of Staying Power
Platforms, not just products
Services, not just products
Capabilities, not just strategy
Pull, don't just push
Scope, not just scale
Flexibility, not just efficiency

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Discussion

Summary & Wrap-up

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What we learned from using Porter's Model as lens

- Investing in cybersecurity creates hard to replicate capabilities that create barriers to entry which diminish the *Threat of New Entrants*.

- Investing in cybersecurity creates differentiation in products which diminishes the *Threat of Substitutes*.

- Product differentiation through cybersecurity, combined with a growing demand for cybersecurity, diminishes *Bargaining Power of Customers*.

- When cybersecurity is leveraged to spawn new businesses *Industry Rivalry* is diminished.

- Investing in cybersecurity usually doesn't affect the *Bargaining Power of Suppliers*.

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What we learned from using Cusumano's Principles as lens

- Cybersecurity can create **staying power** through the *Platforms, not just products* principle by helping build stronger platforms.

- Cybersecurity can create **staying power** through the *Services, not just products* principle by providing cybersecurity services together with other products.

- Cybersecurity can create **staying power** through the *Capabilities, not just strategy* principle by making cybersecurity a core capability.

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What we learned from using Cusumano's Principles as lens

- Cybersecurity can help create **staying power** through the *Pull, not push* principle by preparing companies when the market requires cybersecurity. The impact will not be as big because this principle is more focused on having continuous feedback from the market.

- Cybersecurity can help create **staying power** through the *Scope, not scale* principle by integrating cybersecurity evenly across all products.

- Cybersecurity can help create **staying power** through the *Flexibility, not just efficiency* principle by creating a infrastructure that is flexible to change.

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What we learned from using Cusumano's Principles as lens

- The first 3 principles show how investing in cybersecurity can **create** staying power for companies.

- The last 3 principles show how investing in cybersecurity can **enable** staying power for companies.

- When managers invest in cybersecurity they need to evaluate it from the perspective of all 6 principles as **several** ways in which a company can gain staying power can occur **simultaneously**.

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Next Steps

- Build a database of examples where cybersecurity gave a competitive advantage.

- Build a framework to help managers create a competitive advantage from cybersecurity investments.

- If you have a story to share with us about cybersecurity as a competitive advantage please contact us.

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