

# Building parametric cases

Prof. Vaughn Tan, PhD

Winding Road  
Strategic advisory

Fellow, AI for Human Reasoning  
Future of Life Foundation

Head, SEA Executive Education  
UCL School of Management

Fellow, Centre for Strategic Futures  
Government of Singapore

Partner and co-founder  
Dredge Partners LLP

Visiting Research Fellow,  
University of South Australia

# Why teach with cases?

1. Complexity partly simulates real-world decision situations.
2. Active learning through analysis and debate.
3. Integration of multiple perspectives and stakeholders.
4. Development of judgment and decision-making skills.

**tl;dr: Students are more engaged, find content more relevant and concrete, and are put in more true-to-life situations when teaching happens via the case method.**

# For those benefits to accrue, cases should ...

1. Map closely to focal concepts being taught.
2. Exclude information mapping to non-focal concepts.
3. Feel realistic (for high applicability of learnings).
4. Feel local (to be engaging and perceived as relevant).
5. Feel recent (to be perceived as relevant).

# But cases are usually ...

1. Strongly tied to
  - a. A specific geographical context,
  - b. A specific focal company or organisation,
  - c. The specific time when the case was written.
2. Written to be broadly relevant to multiple contexts.
3. About North American or European contexts or organisations.

# Which is because ...

1. Traditionally produced cases are time and cost-intensive.
2. They take 6-12 months each to research, write, and approve.
3. Localising traditionally produced cases requires both
  - a. Case-writing expertise and
  - b. Adequate demand for localised cases.

Cases are largely developed out of North America and Europe and focus on those contexts (60-70%).

# Current case coverage

1. 85% of cases developed by 4 centres (North America, Europe).
2. 60-70% of cases focus on North America and Europe.
3. 65-90% of cases are about
  - a. General strategy and management
  - b. Finance or accounting
  - c. Marketing and sales
  - d. Entrepreneurship
  - e. Operations
  - f. Organisational behaviour and leadership

# The problem, respecified

1. Traditional cases are too time-/money-expensive.
2. This makes it hard to justify and generate cases that work better pedagogically, especially for non-Western students and for public sector contexts:
  - a. Highly **content-specific** cases (except general content).
  - b. Highly **location-specific** cases (except high-demand geos).
3. **Case method teaching benefits are rarely fully realised.**

# Parametric cases (a theory)

**What if it were possible to generate localised, content-specific teaching cases on-demand, based on user-defined parameters** (designed to improve learning outcomes via increased spatio-temporal relevance, content-specificity, and student engagement):

1. Location (country/region)
2. Type of focal organisation and focal team/function
3. Timeframe
4. Focal content

# Naive first stab

1. Claude Sonnet 4
2. “Write a 2-6 page case, structured like a traditional Harvard Business School teaching case, about the decisionmaking dilemma faced by the strategy team of the Singapore Ministry of Foreign Affairs in 2025. Should Singapore continue to align with the US or pivot alignment to China?”
3. Clearly not enough context in the prompt.

## Singapore's Strategic Crossroads: Choosing National Goals in an Era of Great Power Competition

Harvard Business School Case Study

### Executive Summary

In August 2025, Dr. Sarah Lim, Director of Strategic Planning at Singapore's Ministry of Foreign Affairs, convened an emergency strategy session with senior officials. The agenda had a deceptively simple title: "Defining Singapore's Primary National Objectives." Yet the room buzzed with tension as participants realized they fundamentally disagreed about what Singapore should actually be trying to achieve as a nation.

The immediate trigger was the U.S.-China alignment ultimatum, but the deeper issue had become crystal clear: Singapore's leadership had never explicitly chosen between competing visions of national success. Was Singapore's primary goal economic prosperity, physical security, cultural preservation, democratic values, regional influence, or something else entirely? The strategic alignment decision could not be made until this fundamental question was answered.

### The Goals Dilemma

The crisis began when Deputy Prime Minister Gan argued forcefully for U.S. alignment, stating, "Our primary goal must be preserving Singapore as a free, democratic society." Finance Minister Chen immediately countered, "No, our goal is maximizing economic growth and prosperity for our citizens." Defense Minister Kumar interjected, "You're both wrong—our goal is ensuring Singapore's physical survival and security."

Dr. Lim realized that their strategic paralysis stemmed not from insufficient analysis of options, but from the lack of clarity about what they were trying to optimize for. The alignment decision was impossible because they had never agreed on what constituted success for Singapore.

### Competing Goal Frameworks

Through extensive interviews with stakeholders, Dr. Lim's team identified six distinct goal frameworks being advocated within Singapore's leadership:

**Goal Framework 1: Economic Maximization** Proponents argued Singapore's primary objective should be maximizing GDP per capita and economic growth. This view, championed by the business community and Finance Minister Chen, suggested that material prosperity was the ultimate measure of national success. Under this framework, strategic decisions should be evaluated solely based on their economic impact on Singaporean citizens.

1. Not clearly focused
2. No clear protagonist
3. Context description omits key details for discussion
4. Some nonexistent facts
5. No citations
6. Core scenario/dilemma not clearly identified
7. Pedagogical purpose of case not clearly defined

# Subsequent refinements

Add more context progressively via successive instructions

1. “Structure the case to tailor it to teaching about just one concept: That goals are inherently subjective, and that strategy is about choosing from the range of many possible goals the one an organisation/government should choose to pursue.”
2. “Do websearch for evidence to present in the case. Restrict to only reputable, official, or peer-reviewed sources.”
3. “Rewrite to cite evidence as footnotes. Ensure that all footnotes exist as real documents or weblinks that can be followed.”
4. “Rewrite to focus on case protagonists who are senior civil servants, not political office holders. The perspective should be of the civil servant tasked to run the working group.”
5. [and many many others]

## The Singapore Alignment Dilemma: Navigating Great Power Competition in 2025

A Teaching Case for Executive Education

### Background

On a humid August morning in 2025, Director Sarah Lim sat in her corner office at the Ministry of Foreign Affairs (MFA) building, reviewing intelligence briefings that would shape one of Singapore's most consequential foreign policy decisions in decades. As Senior Director for Strategic Policy and the newly appointed chair of the Inter-Ministry Strategic Alignment Task Force, she faced a challenge that would test every principle of Singapore's pragmatic diplomacy.

The task force's mandate was unambiguous yet daunting: recommend whether Singapore should maintain its delicate balancing act between the United States and China, or whether the rapidly shifting geopolitical landscape demanded a more decisive alignment with one great power over the other.

### The Changing Global Context

The return of Donald Trump to the U.S. presidency in January 2025 had dramatically altered the international landscape. Unlike his previous term, Trump's new administration was populated with what analysts described as "hawkish and new conservative elites" who viewed the U.S.-China relationship through an explicitly competitive lens<sup>1</sup>. The new administration had campaigned on imposing 60% tariffs on Chinese goods, though early actions suggested a more moderate 10% increase—still significant enough to ripple through Singapore's trade-dependent economy<sup>2</sup>.

Simultaneously, China's leadership had signaled a more assertive foreign policy stance, particularly regarding Taiwan and the South China Sea. Beijing's growing frustration with what it perceived as containment strategies had led to increased pressure on middle powers like Singapore to choose sides in what many analysts now characterized as a new Cold War<sup>3</sup>.

For Singapore, a nation where 64% of citizens held favorable views of China—the highest among advanced economies—while maintaining deep security ties with the United States, this global polarization posed an existential strategic challenge<sup>4</sup>.

### Singapore's Balancing Act: Two Decades of Pragmatic Hedging

Since establishing diplomatic relations with China in 1990, Singapore had masterfully pursued what scholars termed "hedging"—maintaining strategic partnerships with both superpowers on different issues while avoiding exclusive alignment with either<sup>5</sup>. This approach had delivered remarkable dividends.

### Economic Integration with China

# Many, *many* iterations later ...

1. The list of required instructions and parameters is hella long.
2. But the case kinda works?
3. Has enough relevant detail
4. Focused on one concept
5. Facts check out and are cited
6. Clear protagonist
7. Clear situation
8. Clear engagement model

# Relocating cases in time and space

1. Small handful of structured prompt mods *seem* adequate to
  - a. Relocate to nearby or distant geography
  - b. Change timeframe
2. Pedagogical objectives superficially validated
3. Content needs to be validated by people familiar with context

## The Danish Dilemma: Navigating Great Power Competition in 2020

### Background

As autumn arrived in Copenhagen in October 2020, Senior Director Lars Andersen sat in his office on the third floor of the Ministry of Foreign Affairs building at Asiatisk Plads, reviewing the agenda for what promised to be one of the most consequential inter-ministerial meetings in recent Danish history. Prime Minister Mette Frederiksen had tasked him with leading a multi-ministry task force to address a fundamental question that would shape Denmark's future: Should Denmark continue its traditional alignment with the United States and the Western alliance, or should it pivot toward deeper engagement with China?

The question was not academic. Recent events had forced Denmark into an uncomfortable position where maintaining relationships with both superpowers was becoming increasingly difficult. In June 2020, Denmark had openly opposed China's Hong Kong national security law, straining the Comprehensive Strategic Partnership established with China in 2008, where energy cooperation had been hailed as the "crown jewel" of bilateral relations. Simultaneously, tensions with the United States under President Trump had reached new heights, with 41% of Danes now viewing the US as a threat following the previous year's diplomatic crisis over Greenland.

### The Strategic Context

Denmark's position in 2020 reflected broader global shifts that had accelerated throughout the previous two decades. Since 2000, the most important area of cooperation between China and Denmark had been energy, with particular focus on renewable energy like wind power. Danish companies like Ørsted had become global leaders in offshore wind technology, with Denmark generating nearly half its electricity from renewable sources by 2020. This technological leadership had created substantial economic opportunities with China, which was rapidly expanding its renewable energy capacity.

However, 2020 had witnessed escalating tensions over Chinese investments in Greenland, with the US Ambassador to Denmark accusing Beijing of advancing "predatory economic interests" in Arctic regions. The strategic importance of Greenland had grown significantly, as climate change opened new Arctic shipping routes and resource extraction opportunities, drawing the interest of global powers including China.

Economically, Denmark's dependence on both powers had deepened considerably. By 2020, 2.2% of Denmark's value-added production was absorbed by final demand in China, higher than most other countries. Meanwhile, Denmark's security relationship with the United States remained fundamental, built around NATO membership since 1949 and hosting the crucial Pituffik Space Base in Greenland.

Understood! I'll now proceed with these updated parameters:

- **Focal organization:** Ministry of Foreign Affairs, Denmark
- **Focal country:** Denmark
- **Protagonist:** Senior Director at Danish MFA running a multi-ministry task force
- **Scenario:** Whether Denmark should continue alignment with the West/US or switch allegiances to China
- **Timeframe:** 2020 (with 20 years of historical context, so 2000-2020)
- **All other specifications remain the same**

# Changing focal concepts

1. Single, highly structured prompt mod *seems* adequate to change the focal teaching concept.
2. Pedagogical objectives superficially validated
3. Content needs to be validated by people familiar with context

## Denmark's Strategic Edge: Leveraging Unique Assets in Great Power Competition

### Background

As autumn arrived in Copenhagen in October 2020, Senior Director Lars Andersen sat in his office on the third floor of the Ministry of Foreign Affairs building at Asiatisk Plads, reviewing the agenda for what promised to be one of the most consequential inter-ministerial meetings in recent Danish history. Prime Minister Mette Frederiksen had tasked him with leading a multi-ministry task force to address a fundamental strategic question: How should Denmark leverage its unique national assets to maximize its strategic advantage relative to peer countries in an era of intensifying great power competition?

The question was not academic. Denmark possessed several distinctive capabilities that were valuable, comparatively rare among similar-sized nations, and difficult for competitors to replicate. The challenge was determining which foreign policy alignment would best allow Denmark to exploit these advantages while other Nordic and European peers struggled to find their own strategic niches.

Recent events had crystallized the urgency of this strategic positioning. Denmark's unique combination of Arctic sovereignty through Greenland, world-leading renewable energy technology, and deep security relationships with both NATO and key partners had created unprecedented opportunities—but also forced difficult choices about how to maximize Denmark's competitive advantage over countries like Norway, Sweden, Finland, and similarly-sized European states.

### Denmark's Strategic Assets Portfolio

As Andersen prepared for the meeting, he reviewed the comprehensive analysis of Denmark's distinctive strategic advantages that his team had compiled:

**Asset 1: Arctic Gateway Control** Through Greenland, Denmark controlled one of only three sovereign Arctic territories (alongside Russia and Canada), providing unique access to emerging Arctic shipping routes, rare earth minerals, and strategic military positioning. Greenland hosted the northernmost deep-water port in the world and Pituffik Space Base, crucial for Arctic training, scientific research, and missile defense systems. No other Nordic country possessed comparable Arctic sovereignty, and climate change was rapidly increasing this asset's value.

**Asset 2: Renewable Energy Technology Leadership** Denmark had achieved world-leading renewable energy capabilities, with wind power providing 56% of electricity generation by 2020, far exceeding other European countries. Danish company Ørsted had built the world's first offshore wind farm in 1991 and remained the global leader, while Vestas and other Danish firms controlled significant shares of the global wind turbine market. This technological edge was increasingly valuable as countries worldwide faced carbon reduction pressures.

I'll rewrite the case study to focus on the new teaching concept of optimizing strategic advantage relative to peer countries. Let me modify the existing case to emphasize Denmark's unique capabilities and how different foreign policy choices would affect its competitive position.

Denmark's Strategic Edge: Leveraging Unique Assets in Great Power Competition  
Document · Version 2

# Denmark's Strategic Edge: Leveraging Unique Assets in Great Power Competition  
by背景  
85 pages, revised  
10 September 2020,  
Version 2.0  
Last updated:

I've completely rewritten the case study to focus on the new teaching concept of **choosing a foreign policy stance that optimizes strategic advantage relative to peer countries**. The revised case, "Denmark's Strategic Edge: Leveraging Unique Assets in Great Power Competition," now emphasizes:

# Preliminary conclusions

1. Surprisingly promising.
2. (If it works) case generation will become ~100-300x faster.

But:

3. Unclear if generated cases are “good” for all content foci.
4. Likely to run into constraints for geos/time periods where the selected model doesn’t have extensive training data.
5. Needs content validation.

# Next steps

**Next 2 weeks:** Test case generation quality/speed from  
Transferring context elicitation to a single prompt (vs multiple  
prompt-response cycles) and  
Collecting all parameters via a structured form (vs sequential  
response to LLM questioning).

**2/9:** Validate content with PMO Strategy Group.

**17/9:** (Potentially) pilot parametric case during Protocol Sch.

**19/9:** (Potentially) pilot parametric case as the public strategy  
component in Lee Kuan Yew Sch of Public Policy exec ed course.