

## GUIDE TO SPEAKING POINTS:

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The deck and speaking points can be used in two ways.

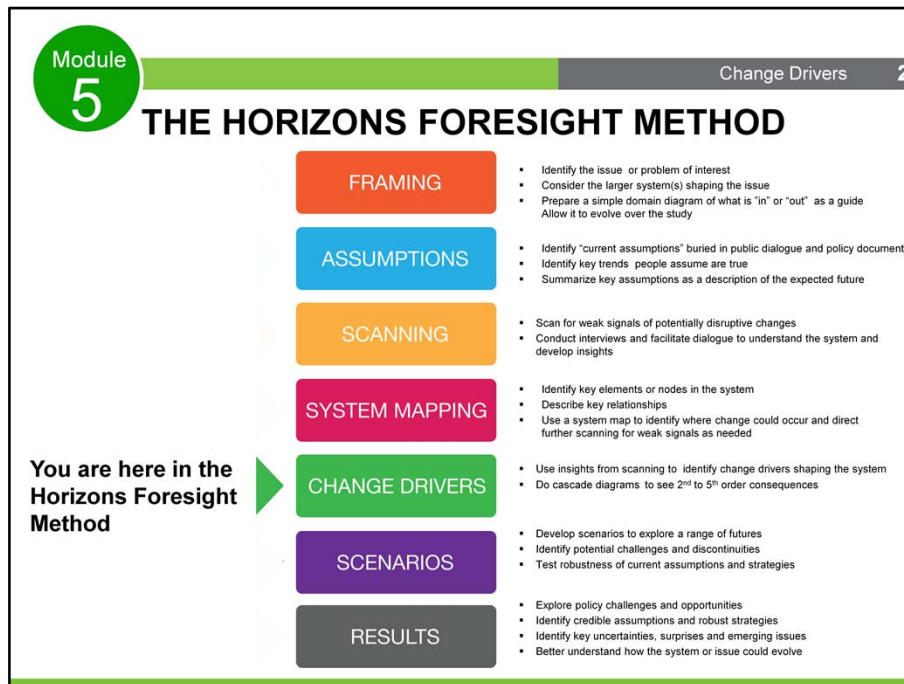
- As a learning tool to enhance the reader's foresight literacy
- As a presentation tool to accompany the facilitation of foresight sessions

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### The Horizons Foresight Method – Change Drivers:

- Up to this point in the process, the Horizons Foresight Method has involved scanning to find weak signals, turning them into insights and mapping systems to facilitate the search for new weak signals.
- This module identifies the forces that are driving change in the system under study.
- As these change drivers interact with the system, they create significant, disruptive change. This interaction is the central driver in scenario development—as will be demonstrated in the next training module.
- In this module, the insights gathered during scanning are analyzed to identify the drivers that will help create strategically useful scenarios.
- All of the insights that are not chosen as drivers are still highly valuable and will shape the project in other important ways.

## LEARNING OBJECTIVES

- Understand when, how and why to use change drivers
- Understand how change drivers are used as part of the Horizons Foresight Method

### Learning Objectives

## WHAT IS A CHANGE DRIVER?

- Definition: In the world of cause and effect, a change driver causes significant change in the system under study.
- A change driver is a significant disruptive force that is present in all scenarios, although it may have a different impact in each scenario.
- Change drivers influence elements on the system map. As they interact with one or more elements of the system, those elements change or behave in a new and/or unexpected way. This interaction is one of the sources of surprise and insight in foresight.

### What is a Change Driver?

- A change driver is something that causes significant change in the system under study.
- In a foresight study, a change driver is a significant disruptive force that is present in most or all scenarios, though it may have a different character and impact in each scenario. Module 6 will describe how scenarios are used in the Horizons Foresight Method.
- The indicator of a useful change driver is that it impacts or influences elements of the system and, as a result, the system behaves in new and/or unexpected ways.
- This interaction is one of the main sources of insight in foresight.
- In the Horizons Foresight Method, 5 to 10 significant change drivers are usually identified. They are the driving force that generates different futures.
- It should be emphasized that change drivers are identified after the group has developed a reasonable feel for or understanding of the system under study through scanning and system mapping.



Module  
**5**

Change Drivers **5**

## EXAMPLES OF CHANGE DRIVERS IMAGINE IT IS 1982

- The number of and applications for personal computers are growing
- Anti-smoking sentiment is growing
- Charter of Rights and Freedoms promotes diversity
- China's Reform and Opening-up Policy

### Examples of Change Drivers...

- Imagine it is 1982 ... what change drivers are shaping that world?
  - The number of and applications for personal computers are growing (technological change)
  - Anti-smoking sentiment is growing (value change)
  - Charter of Rights and Freedoms promotes diversity (policy change)
  - China's Reform and Opening-up Policy (policy change)
- Each of these things significantly changed the world—across many sectors and in profound ways.
- It is easy to see technology as a driver; however, note the examples of non-technology drivers.
- Note that each driver is written in the present tense (it is happening now) and often has a sense of direction.

## FROM WEAK SIGNALS TO INSIGHTS TO CHANGE DRIVERS

- The scanning phase helps identify weak signals and insights about what is changing
- The change driver is a succinct statement of what is driving the change
- Example

### **Weak signals** about Russia's recent behaviour:

- Russia wants to expand energy infrastructure and sales to China
- Russia is building new special economic zones to expand ties to the far east
- Russia is building the Eurasian Union to expand its influence
- Russia agrees to sell advanced missile defense systems to China
- New nuclear deal with India and air fighter deal with Malaysia

### **Insight/Change driver:**

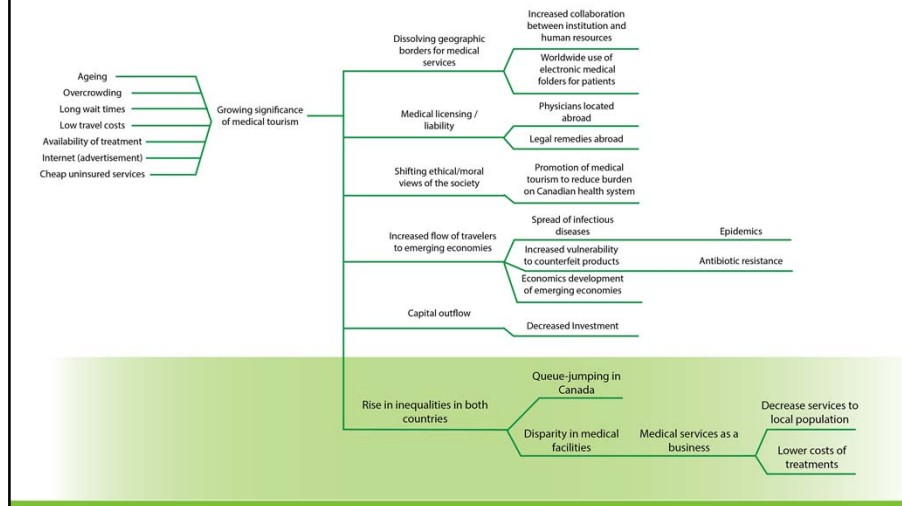
- Russia is pivoting to Asia to expand markets, influence and allies

## From Weak Signals to Change Drivers

- The scanning phase helps foresight practitioners to identify weak signals and insights about what is changing
- The change driver is a succinct statement of what is driving the change
- Here are a number of **weak signals** about Russia's recent behavior:
  - Russia wants to expand energy infrastructure and sales to China
  - Russia is building new special economic zones to expand ties to the far east
  - Russia is building the Eurasian Union to expand its influence
  - Russia agrees to sell its most advanced missile defense systems to China
  - New nuclear deal with India and air fighter deal with Malaysia
- These observations may be summed up as an insight:
  - Russia is pivoting to Asia to expand markets, influence and allies
- In a study on the future of geopolitics, this insight could also be a useful change driver as it could cause significant disruption to current international relations
- Change drivers may evolve as we learn more about the system



## IMPACTS OF A CHANGE DRIVER



### Impacts of a Change Driver

- A **CASCADE DIAGRAM**, as shown above, is a visual illustration of a change driver that explores the impact of the change across several areas over time.
- This is one of the easiest and most reliable ways to get a group to imagine the future and to find surprises that have real strategic value.
- In everyday conversation, we can easily talk about the first order consequences of a change. But getting beyond that is difficult. The cascade diagram helps structure a conversation to make it easier to explore the future.
- In the centre of the diagram is the change driver (in this case: *The growing influence of emerging economies*). To the left are the factors amplifying and dampening the change driver and to the right are potential consequences—first-, second-, third-order impacts and beyond.
- Exploring beyond initial first- and second-order impacts of everyday conversation often leads to the discovery of impacts and consequences that are not obvious or that no one has thought about before. If the group is focussed on the logical, plausible extension of the original driver, valuable new insights about what could plausibly happen may naturally unfold.
- These surprises are not predictions. They should be seen as fertilizer to enrich



and stimulate the imagination as to what could be.

- The change driver in the diagram above has spiraling complexity and impacts many different areas. That could make it a strong candidate to be included in a scenario exercise.

## WHAT MAKES A GOOD CHANGE DRIVER?

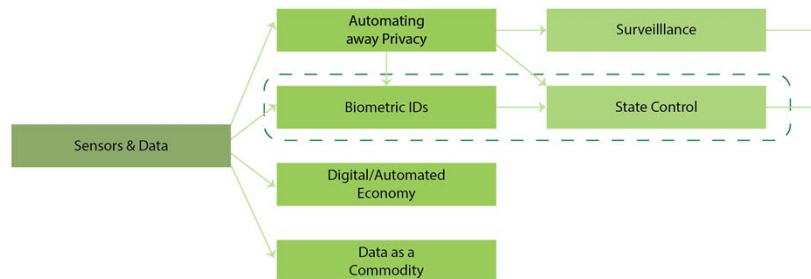
- It causes significant disruption
- The driver or its consequences are not well known or understood (or may be contested)
- The driver has impact within the timeframe (10–15 years)
- It is often a succinct statement with a direction to the change
  - E.g. *Aging* population, *Shrinking* Middle Class, *Rise* of Cleantech

### What Makes a Good Change Driver?

- A good change driver causes significant disruption. It interacts with and/or influences at least one element of the system in surprising ways.
  - An influence diagram of the change driver contains second-, third- or fourth-order consequences that are surprising or disruptive.
- The driver or its consequences are not always well known or understood and may be contested. Its impacts have not been factored into current strategy or policy.
  - Climate change is a good example. There is awareness but not deep understanding of the long-term consequences.
- The driver has an impact within the timeframe. In the Horizons Foresight Method, a good change driver has the potential to create significant disruptions or new policy challenges in the system in the next 10 to 15 years.

- It is often a succinct statement and summarizes the essence of the driver in less than 7 words.
  - It contains a verb, adjective or a phrase that give a sense of the direction of the change, if that is known.
  - E.g. In place of “Changing demographics”, a more *descriptive* change driver would be:
    - *Aging* Population, *Declining* Fertility, Population *diversification* or even *Shrinking* Middle Class, depending on the area of interest.

## CHOOSE THE MOST STRATEGIC WAY TO FRAME THE DRIVER

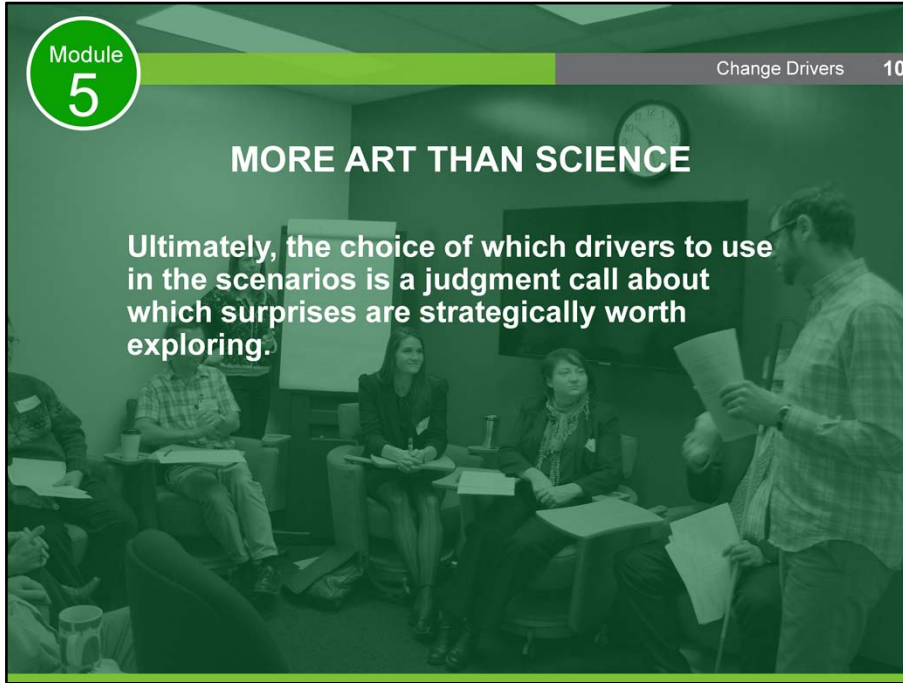


### Choose the Most Strategic Way to Frame the Driver

- A **CASCADE DIAGRAM** can be a useful tool in finding the most strategic way to frame a change driver.
- As in the example on the slide, imagine working with the driver the rise of sensors (and data)
  - Looking downstream, there may be four implications of the driver:
    - Automating away privacy;
    - Biometric identification;
    - A more digital and automated economy; and
    - Data as a valuable good (a commodity).
- If the foresight study is about the future of security, you might look along the chain. A more disruptive driver to explore would be biometric IDs.
  - In other words, if that is the branch that generated the most discussion and surprising results, it could be more strategic to highlight this specific change driver rather than the more general driver.

## MORE ART THAN SCIENCE

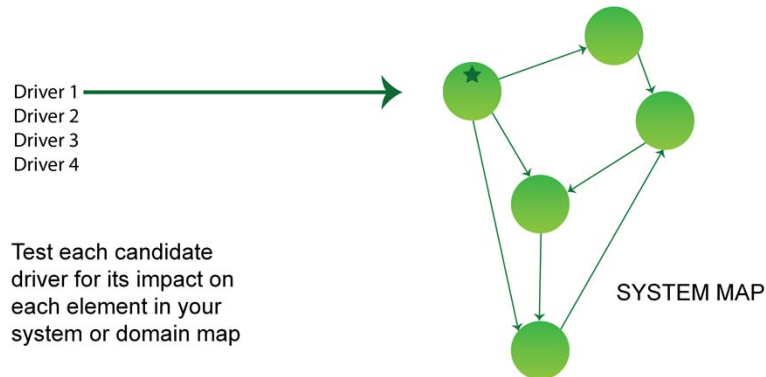
Ultimately, the choice of which drivers to use in the scenarios is a judgment call about which surprises are strategically worth exploring.



### More Art than Science

- The identification of change drivers is more of an art than a science.
- Identifying the strategic drivers is largely intuitive; however, it is also informed by the rigorous work leading to this point in the foresight exercise.
- As the practitioner comes to know the system better, the strategically useful change drivers become more apparent.
- Ultimately, the choice of which drivers to use in the scenarios is a judgment call about which surprises are strategically worth exploring.

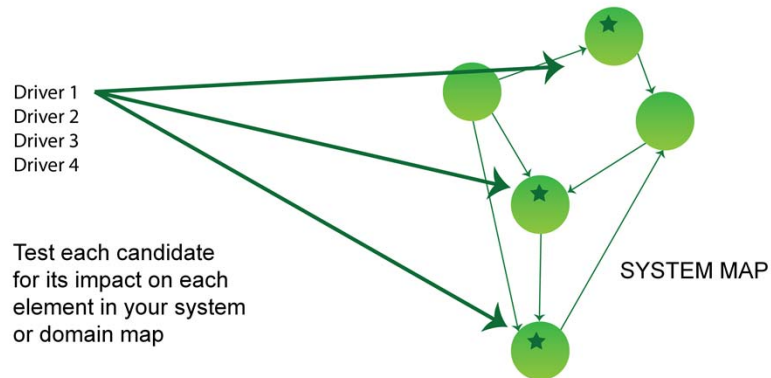
## TESTING TO IDENTIFY USEFUL DRIVERS



### Which Drivers to Choose

- You may identify 10 or 20 or more drivers with a potential impact on the system.
- It would be a challenge to work with so many drivers, so it is best to try and narrow them down to the ones that you expect to most significantly affect the system under study.
- This slide and the next one offer a conceptual way to view this problem. This will be followed by a description of two simple approaches to sort out which drivers to use.
- To find the most useful drivers, test each driver against each node or system element in the system map or domain diagram.
- Think about the nature of the interaction, and try to determine whether the change driver has a small or large interaction or impact on each node.
- In theory, it could impact just one system element and still be a valuable driver.

## TESTING TO IDENTIFY USEFUL DRIVERS



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[illegible]

- If you don't have a system map, you can use a domain map to help identify useful drivers. This is an example where Horizons has used a domain map to assess the impact of change drivers.
- In this case, the focus was on exploring the impact of automation (one of the change drivers). The domain map includes a number of elements thought to be important in the study.
- A brainstorming session was held, and the impact of automation on each element of the domain map was recorded.
- The same exercise was conducted with other drivers.
- This approach allowed the group to talk about which drivers they thought were more important and thus should be used in the scenario exercise.

## USING CROSS-IMPACT ANALYSIS TO SELECT DRIVERS

		SYSTEM ELEMENTS						
CHANGE DRIVERS		A	B	C	D	E	F	G
	1	H						
	2			L		H	H	
	3							
	4				H			H
	5		H	H	H			
	6	H			H			
	7						H	H

**Rating:**

H = Change driver has a high impact on these system elements

L = Change driver has low impact on these system elements, but still interesting

Empty cell = no impact

### Using Cross-Impact Analysis to Select Drivers

- A cross-impact analysis is another systematic way to reduce the number of change drivers to those that may have significant or at least interesting impacts on the system under study.
- In this cross-impact matrix, the change drivers are listed down one side of the matrix and the system elements or nodes across the top.
- For each cell in the matrix, determine whether the particular change driver impacts the corresponding system element. Place an “H” in the cell if the impact is significant and disruptive. Place an “L” if the impact is low, but still interesting in some way. If there is no impact, leave the cell blank.
- At Horizons, this activity is conducted as a brainstorming session. Much can be learned about the system and some of the potential surprises. If there are a lot of cells, it is useful to divide up into small groups and assign each one a region of the matrix.
- If there are a large number of drivers or system elements, it is useful to write a short description of the impact in the cell to help recall the impact. This is useful information for the end of the exercise, when selecting the final change drivers.
- In the example above, driver 3 can be dropped as it has no significant impact on the system.

- Once all the drivers have been rated, review the impacts and choose those drivers that seem to have the most surprising and unexpected impacts on the system.

## USING CROSS-IMPACT ANALYSIS TO EXPLORE INTERACTIONS BETWEEN DRIVERS AND FIND NEW SURPRISES

THE WHOLE MATRIX

CHANGE DRIVERS	CHANGE DRIVERS			
	1	2	3	4
	1	X		
	2	X		
	3	X	X	
	4	X	X	X

A CLOSER LOOK

	THE DIGITIZATION OF THE ECONOMY
GROWING INEQUALITY	INTERNET BECOMES A BASIC HUMAN RIGHT HEADLINE: OECD, HUMAN RIGHTS WATCH SLAM CANADA'S CONNECTIVITY IN THE NORTH

### Using Cross-Impact Analysis to Explore Interactions between Drivers and Find New Surprises

- Up to this point, we have demonstrated how CASCADE DIAGRAMS can be used to look at the impact of a change driver **over time** and how cross-impact matrices can be used to look at the interaction between drivers and system elements. This final exercise looks at the potential for interaction and surprise as the change drivers interact with each other.
- Once the change drivers have been chosen, it is very useful to look at the surprises that could emerge as these drivers interact with each other. The cross-impact matrix can make the process a little easier and more systematic.
- For each cell in the matrix where two change drivers intersect, participants are asked to consider the following questions:
  - When both of these change drivers are occurring, how might they interact?
  - Does one amplify the other?
  - What are some plausible consequences for the system?
  - Are they significant, disruptive or surprising?
- In the example above, two drivers are cross-impacted: an economic change

driver, ***the digitization of the economy***, and a social change driver, ***growing inequality***.

- A plausible interaction between these two change drivers may be that one day internet access may be recognized internationally as a human right.
  - It is useful to brainstorm a “headline” that summarizes or illustrates the potential consequence, for instance: **“OECD and Human Rights Watch slam Canada’s connectivity in the North”**
- 
- This exercise provides a feel for how the system could behave and some of the potential surprises that could emerge. It is useful input for the scenario exercise.
  - Note that in this approach, only half of the matrix needs to be filled out.
  - Assume drivers are occurring simultaneously.
  - Horizons is experimenting with games to help participants better understand new change drivers. Cross impact is a good area for gamified learning. One approach Horizons has used in the past is included in the facilitator’s manual.

## WHAT IS NOT A CHANGE DRIVER?

- A statement about the change rather than *what is driving the change*.
- Change drivers are not normally any of the following:
  - problems
  - solutions
  - advocacy / desired states
- If a change driver does not have a significant impact on at least one element in the system map, then it should be discarded.

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## SUMMARY

- Change drivers cause significant change in the system under study.
- Cascade diagrams help identify surprising and unexpected consequences of drivers over time.
- Cross-impact matrices and domain map exercises can be used to identify the most significant and disruptive change drivers.
- The choice of the best change drivers to use is more of an art than a science.

### Summary

- The main purpose of this module is to help practitioners understand what change drivers are and how they are used in the foresight process.
- Change drivers cause significant change in the system under study.
- Cascade diagrams can be used to look at how change drivers have impacts over time that can create surprising and unexpected consequences.
- Cross-impact matrices and domain map exercises can be used to filter through a number of change drivers to find the ones that have impacts and consequences over time that are worth exploring.
- Cross-impact analysis can also be used to explore the surprises that could arise as change drivers interact with each other.
- As demonstrated, the choice of which change drivers to use for further exploration within a foresight study is more of an art than a science.
- *The next module will describe the next step of the Horizons Foresight Method, which is building scenarios. This step requires about 6–10 good drivers.*



## INFORMATION

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