



## How to record weak signals and insights in writing

In Horizons' collaborative foresight process, scanners create written weak signals and insights so they can be shared, discussed and prioritized by a scanning group. This tip sheet offers suggestions on how to communicate weak signals and insights in writing for this purpose. The reader will recall that weak signals and insights share the same intent: to alert others to signs of change that could be sources of disruption. The difference between a weak signal and an insight is only a matter of degrees. An insight is more developed than a weak signal and often higher level: it usually draws on several weak signals, it includes more contextual information, the consequences are better thought through and it may also be more polished. While a weak signal reports a finding, an insight makes the case for how these findings could add up to significant change. Weak signals and insights can be written in various ways:

1. Using a template with key questions
2. In a few key words on a sticky note
3. In one or more paragraphs for publication

Below are some examples of these three writing formats as well as how they can serve a scanning and foresight process.

### Weak signals/insights recorded using a template

#### Why?

A template helps participants report key information in a succinct way. It facilitates the sharing of a scanning hit with just enough detail for it to be discussed, developed, and linked to other findings. A standard template also makes it easier for a scanning community to digest a large volume of scanning hits quickly, whether they are read in a shared folder, online, or on the walls in a [weak signal/insight gallery](#). Including a relevant picture is a helpful memory aid.

For both writer and reader, a template works best when it is simple (e.g. 2-3 questions). See the end of this document for some sample templates. Some participants fill out such templates with bullet points, preferring brevity, while others tend to write in prose and/or with greater analysis and evidence. At earlier stages of the project, the scanning group (or its leaders) may need to

---

decide where to strike the balance between quantity and quality of scanning hits. The group may need to nudge the efforts of participants working too far at either extreme. Ensure scanners understand that these documents are initially only drafts for discussion, rather than highly revised research products. Setting guidelines for the group, such as word limits (e.g. 150 words for a weak signal, 250 words for an insight) or the number of sources (e.g. 1–3 for a weak signal) can help manage expectations. When all draft weak signals and insights are reviewed, some may be developed further (such as through a [cascade diagram discussion](#)) and some may be discarded if not sufficiently interesting. In particular, if some scanning hits are to be published (writing format #3), they can be revisited after further evidence gathering and discussion of main ideas.

A note when motivating a new group scanning activity:

If participants perceive the bar as too high, they may hold back on reporting findings to the group. A point worth registering is that spotting signs of transformative change can be quite difficult in practice. These signs may not appear daily, and certainly involve some luck (but also practice [[tip sheet – 13 tips for a good scanning practice](#)]). Encouraging participants to practise reporting weak signals, even if they appear to point to incremental rather than transformative change, will help individuals develop their scanning muscle. Another way to alleviate perfectionist tendencies is to emphasize the benefit of scanning for the community: together participants are quickly building a better sense of the system. A large quantity of scanning hits helps the group triangulate additional meanings that go beyond the contribution of individual scanning hits. Many researchers are accustomed to seeing their work as an independent activity; in foresight, however, scanning is a group activity.

## Examples of drafts created in templates at Horizons:

Weak Signal #1: This weak signal was developed for Horizons' weekly scanning roundtable meeting and posted on our shared internal platform [[tip sheet - how to share weak signal signals](#)].

### **WEAK SIGNAL: National Failure Day Supports Risk-taking**

#### **What:**

In Finland each year, a group of students and young entrepreneurs led by Aalto Entrepreneurship Society promotes conversations and meetings at universities and businesses to encourage people to talk about failure as a way to support risk-taking. The initiative is playful, self-organizing and not institutionalized, which encourages widespread ownership.

#### **So What:**

Failure is a taboo topic. However, as we transition to a digital economy, risk-taking and experimentation will be essential for success. Countries that embrace failure and learn from it are likely to be more innovative and successful. Finland has been a leader in promoting innovation for years. It will be useful to monitor this new cultural experiment and learn from the Finnish example.

#### **Source:**

Ylu, Finns celebrate International Failure Day, [http://yle.fi/uutiset/finns\\_celebrate\\_international\\_failure\\_day/6879329](http://yle.fi/uutiset/finns_celebrate_international_failure_day/6879329)

Weak Signal #2: This is another brief weak signal format used for internal online sharing. The author quoted straight from the source instead of summarizing in their own language. This can be a time saver for the writer when sharing weak signals within a closed community (not for publication). Inclusion of a photo and video are also helpful to readers. Horizons has collected many weak signals about new developments in robotics, suggesting this weak signal could be perceived as an incremental change, rather than a transformative one. However, this piece of evidence, when paired with other information collected by the scanning community, could contribute to a new insight. For example, perhaps it may feed into an insight about the readiness of robots to work alongside people as coworkers. When in doubt, it is helpful to encourage scanners (especially beginners) to report their findings, as it provides others the opportunity to identify insights that may not be apparent to the weak signal's author.

### **WEAK SIGNAL: Sawyer, the Industrial One-Armed Collaborative Robot**

#### **What is your weak signal or idea?**

- Rethink Robotics will launch, in mid-2015, Sawyer – “the new high performance collaborative robot designed to execute machine tending, circuit board testing and other precise tasks that are impractical to automate with industrial robots.”
- “Sawyer is a significant addition to the Rethink Robotics family of smart collaborative robotics, giving manufacturers the high performance automation they need for a wider range of tasks, while maintaining the critical flexibility, safety and interactive user experience that have become synonymous with our brand.”
- “Weighing only 19 kg (42 lbs), Sawyer features 7 degrees of freedom with a [1+ metre] reach that can manoeuvre into the tight spaces and varied alignments of work cells designed for humans. Its compliant motion control allows it to “feel” its way into fixtures or machines, even when the position varies slightly. This enables our adaptive [precision] that is unique in the robotics industry and allows Sawyer to work effectively in semi-structured environments, while operating safely next to human co-workers.”
- **Price:** \$29,000 USD base price

#### **What sources, links or documents would you suggest to learn more?**

- [Sawyer | Redefining Robotics and Manufacturing | Rethink Robotics](#)
- [Meet Sawyer, the One-Armed Collaborative Robot - GE Reports](#)
- <https://www.youtube.com/watch?v=S4mULTknb2I>

Insight #1: This draft insight was posted for internal online sharing to help kick-start a discussion. While this insight draws on only two sources (much like a weak signal), the sources themselves are summaries of a number of weak signals (pointing to a rise in Asian democracies at the same time that democracies around the world are under duress). The results of the discussion could help further develop this insight.

## **DRAFT INSIGHT: The Battle for Asian Hearts & Minds**

### **What is your insight?**

The big picture story here is related to the effectiveness and influence of authoritarian state capitalism (as exemplified by China & Russia) vis-à-vis the effectiveness and influence of capitalist democracy (as exemplified by the US, EU & Australia), and how this may play out in the hearts and minds of Asian countries over the next 15 years.

### **What are the implications of this insight?**

Signals point in both directions:

China's ability and perceived ability to "get things done" (e.g. build capital-intensive infrastructure in both China and around the world, dramatically grow the economy, rapidly implement large-scale social policy—pension coverage, etc.) stands in contrast to U.S. partisan stalemates, the anti-EU populist shift, and comparatively sluggish Western economic growth rates. One Economist special essay on democracy points out that "...China poses a far more credible threat than communism ever did to the idea that democracy is inherently superior and will eventually prevail."

On the other hand, the number of democracies is growing in Asia, by one account from 3 out of 23 countries in 1987 to 6 out of 23 in 2012. As of 2013, the entire region of South Asia (1/4 of the world's population) is now living in citizen-led democracies.

Relevant to both sides is how the Internet is revolutionizing how all governments function. While elections are limited in China, the government is able to keep a pulse on the needs and wants of the citizens through social media traffic, and can anticipate and respond to protests as they occur. Online engagement can also contribute to a shift in the traditional operations of democratic institutions, allowing for enhanced citizen involvement in governance structures.

### **References:**

- [DEMOCRACY | The Economist](#)
- [Deepening democracy in South Asia: Off square one | The Economist](#)

Insight #2: After some discussion and development among a small group of scanners, this insight was revised and presented to a wider scanning audience in an [insight gallery](#). As a result, the implications are quite detailed and the references more numerous compared to the previous insight.

## **INSIGHT: Booming Demand for Healthcare Systems and Products in Asia**

### **How would you describe this insight?**

**Asians are taking a greater interest in health due to aging populations, rising prosperity and concerns about the health impacts of urban living (pollution, toxins in food, stress, Westernized diets).** With ongoing improvements in sanitation and infectious disease management, the new health concerns are associated with living longer and treating chronic diseases such as cancer and diabetes. **Asia is also increasingly a supplier of healthcare solutions.** New technologies and opportunities in Asian markets are fueling investments in high tech hospitals, home healthcare devices and new biotech and nanotech pharmaceutical innovations. Innovation is also occurring in informal settings with few regulations and limited resources; this innovation is relatively more driven by pressing need than by top-down principles.

### **What are some implications of this insight for the future?**

#### Expanding players and innovations are increasing options for patients

- Growth of medical tourism (especially to Thailand, Singapore, Malaysia and India).
- Greater possibilities for patients to obtain health information online and from easy-to-use home diagnostics. These innovations could fill gaps in rural health access where trained doctors and nurses are lacking.
- For some, more timely healthcare will reduce barriers to work.

#### Rising demands for universal healthcare

- Where governments are increasing healthcare coverage, investments in facilities and reimbursement schemes are accompanied by a new normative statement that healthcare is a right (e.g. Indonesia, Thailand).
- Rising demand for subsidies for products and services as diverse as fertility treatments for urbanites to basic antibiotics in rural areas.

#### Home-use healthcare may drive informal care and reinforce traditional gender roles

- In Asian countries where adult children are traditionally expected to care for their elderly parents, the growing availability of home healthcare products/services is likely to underline a tension in aging societies around the expected role of women as workers vs. caregivers. In 2012, China announced a strategy to promote continuation of eldercare

in the home; will this be met by daughters, sons, paid homecare workers or robots? The resolution of this question could be an important turning point in family earning and caregiving strategies.

#### Asian healthcare offerings may challenge Western regulations

- Interest in Eastern naturopathic alternatives to Western medicine may grow.
- Innovation in informal settings may offer new service delivery models to heavily regulated healthcare systems, especially for aging populations keen to increase efficiencies.
- As Asian emerging markets compete with developed countries in tackling chronic diseases, we can expect legal and trade battles between brands and generics to be the new war on drugs.
- Growth of international trade in healthcare products and services (e.g. medical procedures) may place pressure to revise or coordinate standards, with the potential for health agreements across countries with compatible health standards or even pressure for a global convergence of standards.

#### **What sources, links, or documents would you suggest to learn more?**

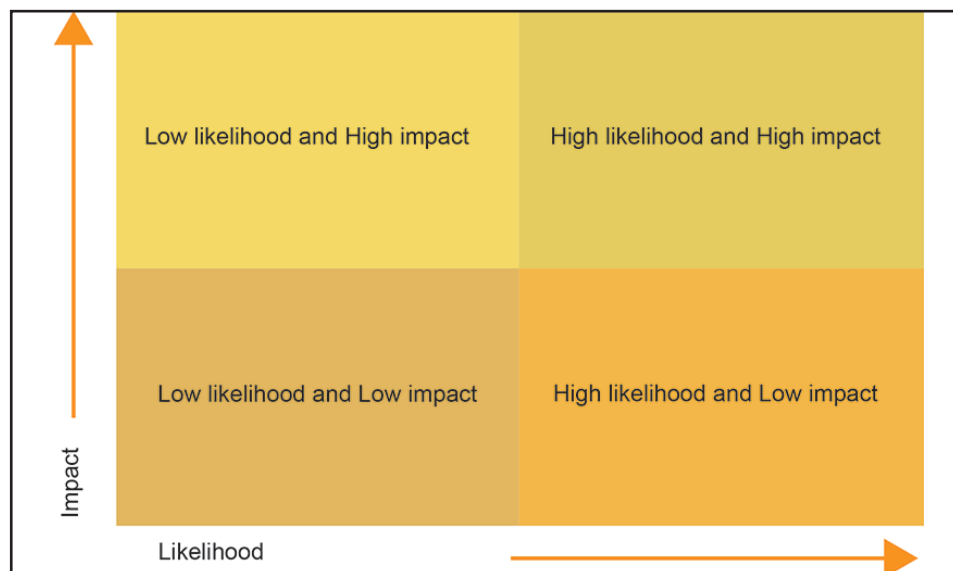
- Weak signals: India continues to be world's major supplier of affordable generic medicines and a trend-setter in the global IP regime. Thailand sees 13% drop in infant mortality in one year; closes rural/urban gap. Indonesia Implements Universal Healthcare (Largest ever)
- Sources:
  - [Chinese Medical Demand Fuels Private Hospital Takeovers](#)
  - [Indonesia launches world's largest health insurance system – CSMonitor.com](#)
  - [Investors rush Into China health care: Healthcare Asia – medical and healthcare news in Asia](#)
  - [Singaporean PM Outlines Key Policy Adjustments, Revamps Medical Insurance Scheme](#)
  - [In Thailand, a 13 percent drop in infant mortality in a year – SmartPlanet](#)
  - [Feeling Great – Healthcare Booms in Asia | Asia Rising TV](#)
  - [Medical Tourism Industry is Driven by Asia | Asia Rising TV](#)
  - [Asia Scores Well in High Tech Healthcare | Asia Rising TV](#)
  - [A Very Western Disease | Asia Rising TV](#)
  - [The Asian healthcare market – a dose of reality](#)
  - [Just Like in the West, Affluence Leads to Weight Gain | Asia Rising TV](#)
  - [The Expanding Home Healthcare Market in Asia – Medical Device Summit](#)
  - [Pharmaceutical pricing: The new drugs war | The Economist](#)

## Weak signals/insights expressed in a few words on a sticky note

### Why?

Once many weak signals/insights are gathered, it may be helpful to evaluate, from a bird's eye view, what the scanning activity produced. This allows the group to assess where they can direct further attention. The scanning hits can be mapped to identify gaps as well as areas of strategic interest, for instance:

1. Using the [domain map](#) as a frame the group could map the scanning results according to their relevance for the key elements. Do some elements have better scanning coverage than others? If so, consider whether to prioritize some topics for the next round of scanning in order to fill gaps.
2. The group could be asked to rate all weak signals/insights by positioning them on a two-dimensional grid according to both:
  - The likelihood of the suggested event; and
  - The expected degree of impact (if the event occurs).



This exercise offers the group a means to filter out the weak signals and insights that are not perceived to be sufficiently important for the study. The group should prioritize insights in the high-impact zone. Scanning hits with high expected impact and low likelihood are especially good candidates for a foresight study, as they are often overlooked by policymakers.



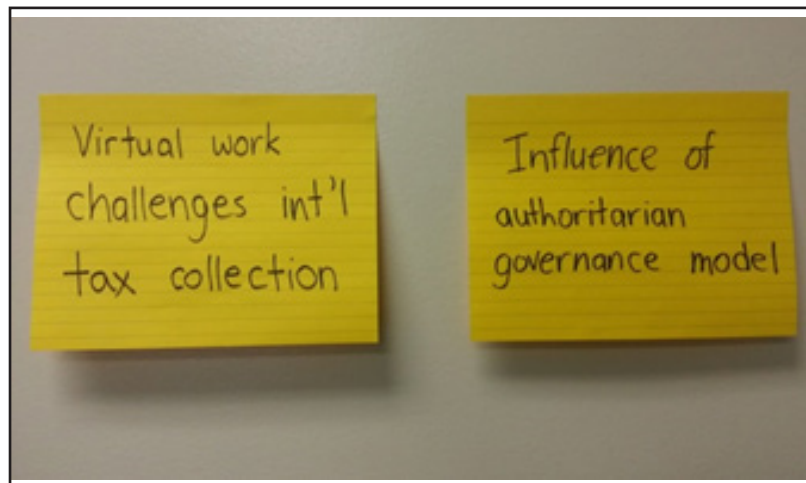
---

A third dimension to consider is the level of public or policymaker awareness. A high or medium likelihood scanning hit may still be worth noting if it is considered to present a high expected impact and awareness is low. For example, a scanning hit may report a familiar change (e.g. it's in the news), but if the consequences are anticipated to be complex and not yet well understood by policymakers, it is worth retaining for the study.

### Examples of weak signals/insights on a sticky note:

Weak signal or insight ideas such as the following can be reduced to a few key words on a sticky note, as shown below.

1. Virtual work may challenge international tax collection.
2. Potential rise in the influence of authoritarian governance models.



## Weak signals/insights written in prose for publication

### Why?

A scanning hit written in prose is most useful when publishing findings. For insights, which involve greater exploration of future implications, it is wise to validate with appropriate subject matter experts that the conclusions seem plausible. It is also helpful to test publication-ready scanning hits with the intended audience to confirm that the necessary context is in place. Can they relate to what is written? Horizons has [published weak signals](#) and insights in various formats, sometimes as individual scan hits and other times as part of a collection of insights in a large study (such as the [Metascans](#)). To aid comprehension of plausible futures, at times Horizons' weak signals and insights are paired with anecdotal examples, images and fictional future vignettes.

## Examples of published weak signals/insights:

Insight #1: This insight was published on its own as a result of a discussion held at Horizons.

### **INSIGHT: The Rise of the Otherwise-abled**

In an ideal world, no one would ever have to come to terms with the loss of a limb due to traumatic injury or illness. Reality is not so forgiving. Diseases, accidents, war, among others, are factors that can severely impact our mobility and even our identity. But technology is starting to redefine how we view health and well-being.

Recently, at a session of “Come Scan with Us”, participants noted that there are some weak signals emerging that might have longer term policy implications for individuals and governments. Soldiers returning from conflicts in the Middle East, for example, rather than attempt lengthy rehabilitation of injured limbs are opting for [replacement using high-tech prosthetics](#). And, few of us will forget the image of [Oscar Pistorius](#), known as the Blade Runner, competing in the 2012 Olympic Games.

*What is meant by human enhancement? At a recent workshop in the United Kingdom, enhancement was defined as a range of approaches that may be used to improve aspects of human function. This may either be for the purpose of restoring an impaired function to previous or average levels, or to raise function to a level considered to be “beyond the norm” for humans.*  
- *Human Enhancement and the Future of Work, March 2012.*

This has led to speculation about the possibility, in the longer term, of human enhancement. A [joint workshop](#) hosted by the Academy of Medical Sciences, the British Academy, the Royal Academy of Engineering and the Royal Society in March 2012, examined the possible implications of cognitive and physical enhancement for the world of work. Participants noted that enhancements had the potential to significantly change the world of work and create multiple political and social tensions.

But it is not just those facing physical challenges that are confronted with change, but those with other challenges as well. For example, since 2003 the Danish consultancy [Specialisterne](#) has been successfully matching autistic adults to positions in the high-tech sector. Often, autistic adults’ ability to focus gives them a particular advantage in the completion of such tasks as data entry or software testing.

The implications of these issues are far from clear, but they raise some interesting policy questions. As technology shifts and understanding evolves, will there need to be a re-examination of what constitutes a “disability”. With respect to physical challenges, as medical technology evolves, what will be the line between enhancement and restoration? How will our different understanding of “ability” impact work? What are the potential ethical issues that these weak signals raise?

Insight #2: This insight on Asian healthcare innovation was published as part of Horizons’ [The Future of Asia: Social Cluster Findings](#) (see references on p. 15). To help the reader understand the insight and its connections to the report’s earlier insights on robotics, the insight was accompanied by a current anecdotal example as well as a fictional vignette set in 2030. Together, these aids suggest the potential role of robotic companions in both the present and future of eldercare in Asia.

### **INSIGHT: Booming Asian Demand for Healthcare Fuels Innovation**

Rapidly expanding demand for healthcare in Asia coupled with fewer constraints on research and development compared to the West could put Asia at the forefront of healthcare innovation. As Asian populations age and prosperity and health awareness increase demand for health options, investments in high tech hospitals, home healthcare devices and new biotech and nanotech pharmaceutical innovation are growing. Combined with a relatively open business environment, these factors could make Asia a global provider of health care solutions. Asia stands to become a development ground for new health care tools, products and services (e.g. robotics for care [see box], 3D printed body parts, frugal innovation, innovation in casual settings), a significant exporter of products and services (e.g. remote diagnostics), and a global medical tourism destination. It could also become a leader in integrative medicine by combining a rich history of [traditional knowledge with Western medical approaches](#).

#### **PARO THE THERAPEUTIC ROBOT**

is a companion robot developed by the Japanese company Takanori Shibata. Sold since 2004, the baby seal robot is used in hospitals and extended care facilities where real animal companions are not practical. **What might therapeutic robots resemble in 2030?**

#### **FUTURE FICTIONAL VIGNETTE:**

##### **Robotics developed for elderly care**

As Ysu places the crocus bulb into the soil she is hit with a pang of sorrow. She used to garden with her husband before he passed. LEE, her assistance robot, empties the last bag of top soil and, reading Ysu’s body language, immediately moves to help with her balance as she stands up. Following her to the kitchen LEE reminds her of the medication she should take with her meal. ‘Daniel has just switched his status to available, would you like me to request a video chat?’ asks LEE. ‘Yes please.’ Ysu enjoys her meal with the company of her grandson who has decided to telepresence into LEE from Winnipeg. As Daniel explains the events of his day he knocks over a glass of water with LEE’s arms. ‘Daniel, you’re as clumsy as your grandfather,’ Ysu says, half holding down laughter.

## Appendix: Sample Weak Signal and Insight Templates

The following templates are simply a starting point for anyone looking to develop a scanning community.

**Weak Signal Title:** \_\_\_\_\_

**What is your weak signal or idea?**

- <Describe your weak signal or idea in one or more lines.>

**What sources, links or documents would you suggest to learn more?**

- <Feel free to link to other weak signals, insights or change drivers that influence or support this weak signal.>

**Any other notes or comments that you would like to add:**

- <If you have other notes or sidebars, include them here. This field is totally optional.>

**Title of your weak signal:** \_\_\_\_\_

How would you describe your weak signal in just a few lines?

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

What context surrounds this weak signal?

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

What are some of the implications of this weak signal for the future?

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

What experts, sources, links or documents would you suggest to learn more?

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**Weak Signal Title (3 to 8 words max):** \_\_\_\_\_

Instructions:

- 150 words max, not including source
- Please add one of the following tags: Social, Technology, Economy, Environment, Governance
- Also please add the week number tag, e.g. 2015W1, 2015W2, 2015W3

**What**

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**So What**

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**Source:** Publication – Original Title (please hyperlink)

**Insight Title:** \_\_\_\_\_

How would you describe this insight?

- <Describe your insight in a few lines. We are looking for three lines or less. A short description enables a lot of the tools around the site to work better.>
- <What's changing?>

What are some implications of this insight for the future?

- <Why is this insight important?>
- <You may want to include sectors or regions affected, and departments and governments that may play a role in the issues created by this insight.>

What sources, links, or documents would you suggest to learn more?

- <Feel free to link to other weak signals, insights or change drivers that influence or support this insight.>

---

*Horizons publications are readily available for personal and public non-commercial use and may be reproduced, in part or in whole and by any means, without charge or further permission from Horizons. We ask only that Policy Horizons Canada be identified as the source of the material.*

PH4-164/3-2016E-PDF  
978-0-660-05851-1

© Her Majesty the Queen in Right of Canada, 2016.