# Don't Leave It to CHA

## Just the Facts

*There are two ways organizations deal with risk: identifying potential risks with a big impact but low chance of occurrence, and identifying known risks. The question becomes: Should organizations try to prevent potential risks, even if the chance of occurrence is low?*

*The author outlines a risk management approach that doesn't consider the chance of occurrence and subjects all potential risks to risk measures. Omitting the chance of occurrence creates an opportunity to manage incidents, so risks are prioritized not by calculated risk, but by potential risk. The result is an organization with a high risk maturity level.*

*Prioritize risk by its potential to increase your risk maturity level* | **by Konstantin Petkovski**

# NCE

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**The days when making a product[1] was an issue are definitively behind us.** The main characteristic of that time was full market domination by market providers.[2] This is aptly described in the famous Henry Ford quote, "Any customer can have a car painted any color that he wants so long as it is black."[3] Consumers[4] had no market influence at all.

Today, the relationship between providers and consumers has turned upside down. The current version of Ford's famous quote might be, "You can paint your car any color you like, as long as it's my favorite color."

The market is an institutionalized playing field of two interacting main players—providers and consumers—with different goals and expectations. These goals and expectations are encapsulated in the product's quality, which can be seen as a sum of attributes.

Looking at these two market players, we can see differences in their goals when they do business[5] with each other. Mainly, market providers strive for maximum profit. Consumers strive for maximum fulfillment of their intrinsic needs and expectations.

Hence, market providers tend to realize maximum profit by creating desirable products at minimum cost. Doing so, they put effort into creating a product, such as a car, that consists of certain attributes (qualities), such as safety, economy, or comfort. These attributes are the result of providers' efforts to design, test, and manufacture the car at minimum cost. This effort is specific to each provider and results in a car with the provider's own specific attributes regarding safety, energy use, or comfort. These specific attributes represent the product's quality from the provider's perspective.

The other market players are consumers and their needs and expectations. Compared to providers, consumers can have a different view on the same product attributes. Car safety, for example, means something vague to a consumer but something concrete and specific to a provider.

Providers and consumers don't necessarily have the same view on what product quality means, which raises the question, "Who determines what quality is?" The closest answer was given by Peter Drucker, who said, "Quality in a product or service is not what the supplier puts in. It is what the customer gets out and is willing to pay for. A product is not quality because it is hard to make and costs a lot of money, as manufacturers typically believe. This is incompetence. Customers pay only for what is of use to them and gives them value. Nothing else constitutes quality."[6]

## Who should care about product quality?

The current market dynamic is driven by consumers' needs and expectations. According to Drucker, providers should be aware that consumers are the market referees who determine what quality is. Therefore, providers should care whether their products are good quality at a good price. This means that providers should carefully decide whether to put (or keep) a product on the market.

However, many incidents show that for organizations, quality issues aren't always obvious. Two examples include:

1. **The Challenger space shuttle explosion in 1986.** This tragedy cost NASA several billion dollars, and seven astronauts died. The direct cause of the explosion was O-ring failures—a technical issue. The root cause, however, was human error. NASA continued with the launch despite warnings

TABLE 1

## Ranking criteria to determine impact

| Potential risk category | Description | Ranking |
|---|---|---|
| **Critical potential risk** | + **Directly affects people's/animals' lives**<br>+ **Can seriously threaten people's/animals' health**<br>+ **Can cause significant environmental damage** | **5** |
| **High potential risk** | + **Can cause noncompliance with regulations**<br>+ **Significantly affects the vital attributes of the product or service, such as functionality, performance, and reliability**<br>+ **Affects the interests of external parties, such as business partners, suppliers, and competitors**<br>+ **Can significantly affect the organization's public image** | **4** |
| **Moderate potential risk** | + **Reduced level of vital attributes, such as functionality, performance, and reliability** | **3** |
| **Low potential risk** | + **Insignificant shortcomings on nonvital product attributes (such as a small, nonvisible scratch on the bottom of a car)**<br>+ **Shortcomings that are related to individual preferences, such as crispy pizza crust** | **2** |
| **No potential risk** | + **No negative impact** | **1** |

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**Providers and consumers don't necessarily have the same view on what product quality means, which raises the question, "Who determines what quality is?"**

from the O-ring supplier. Not launching (even with a known risk) was not an option, which clearly shows that quality wasn't an obvious issue for NASA decision-makers.

2. **The two Boeing 737 Max airplane crashes.** From the overwhelming information provided by the media, you can draw the following conclusions:

   Like the Challenger, the problem with the Boeing 737 Max was well-known but not solved timely or properly. In the months before the crashes, several pilots reported at least nine troubling incidents with the aircraft.

   The effectiveness of Boeing's internal quality- and safety-control mechanisms failed due to decisions made by management, which was motivated by maximizing profits at the cost of the aircraft's safety. Among others, a senior Boeing engineer filed an internal ethics complaint claiming that Boeing's management was more concerned with cost and schedule than safety and quality.

   The Federal Aviation Administration (FAA) also failed to properly perform its tasks. It relied heavily on Boeing employees to vouch for the aircraft's safety and neglected its duty to verify the information Boeing shared about the new plane. In short, the FAA failed to properly fulfill its primary role of independent supervisor.

   Dealing with risk this way resulted in the deaths of 346 innocent people. Furthermore, Boeing suffered a direct loss of about $10 billion. The exact loss can't be calculated, but it surely exceeds multiple times the direct loss.

## The phantasm power of providers

These examples clearly show that providers have the power to make important decisions (even those that lead to the loss of human life). These decisions aren't necessarily based on putting a high-quality product on the market—that is, a product that conforms to customer needs and expectations,[7] complies with regulations,[8] and is made responsibly.[9]

A provider's decision-making power can be limitless and has three important characteristics:

1. It is intentionally (hierarchically) organized. The internal structure of the organization, with its responsibilities and decision-making authorities, is rationally and consciously constructed, and has a clear purpose.
2. Individuals (or a single individual) have independent authority to make decisions with a big impact.
3. The power of the provider is institutionalized by the law. Legislation—especially the legislation of societies that unconditionally believe in the

TABLE 2

## Ranking criteria to determine risk coverage

| Risk coverage | Description | Ranking |
|---|---|---|
| **No risk coverage** | **No control measures** | **5** |
| **Low risk coverage** | **Control measures are partially identified but not (or partially) implemented** | **4** |
| **Moderate risk coverage** | **Control measures are identified and partially implemented. The effectiveness of the control measures is not certain/approved** | **3** |
| **High risk coverage** | **Control measures are identified and fully implemented. The effectiveness of the control measures is not certain/approved** | **2** |
| **Risk fully covered** | **Control measures are identified and fully implemented. The effectiveness of the control measures is certain/approved** | **1** |

self-regulating power of the market—assumes that people act rationally, and therefore are treated as such by the law. In this way, legislation creates a favorable position for providers compared to consumers.

In *Thinking, Fast and Slow*, Nobel Prize winner Daniel Kahneman highlights this inequality: "An unscrupulous organization that draws up their contracts in such a way that users usually sign them without reading them properly, get from the legislation all space to hide relevant information out of view. … A world in which organizations compete with each other by offering better products is preferable to a world in which an organization owes its top position to the fact that it excels in disguising important information."[10]

A decision-maker with limitless internal authority and legislation on his or her side can't resist the temptation of making important decisions from a profit perspective only. When dealing with risk, the kind of power that doesn't consider reality is called phantasm power.

### The silent power of consumers

The three important characteristics of consumers' power are:

1. It is collective. Contrary to the power of providers, the nature of consumers' power isn't individual but collective. The individual impact of a consumer's decision is negligible. However, their collective decisions (collective consciousness)—whether to buy a product or trust a certain provider—can be powerful. That's why this power is described as a silent power.
2. Compared to organizations, the nature of consumers' decision-making is emotional, not rational.
3. The power of consumers is increasing. Due to the information revolution, consumers can get all the relevant information they need about a product and easily share their personal experiences and product preferences with others. This provides market transparency, which tremendously increases consumers' power.

### Dealing with risk

In its simplest form, doing business is making decisions, and making decisions is dealing with risk. That means that when doing business, providers and consumers continuously are dealing with risk, which indicates that dealing with risk is important to both. So, let's examine how organizations and consumers deal with risks.

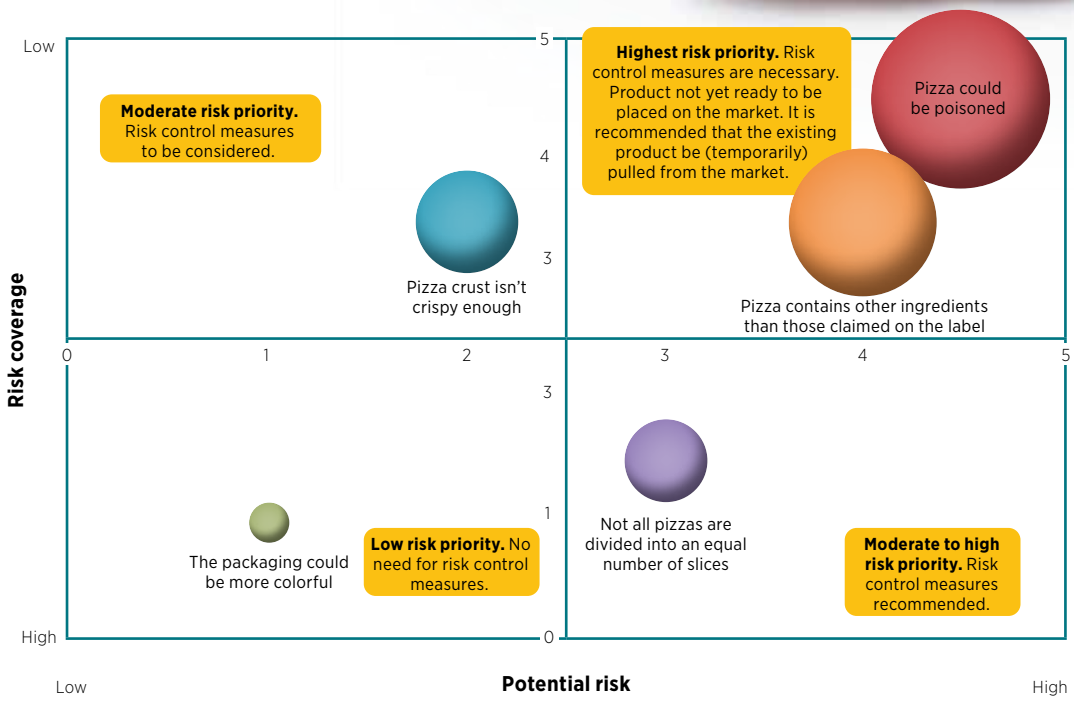
There are two ways organizations deal with risk:

1. **Decision making by risk calculation.** In general, organizations deal with risk rationally usually through common risk practices, which define risk as a product of the impact of unwanted events multiplied by the event's chance of occurrence. This means that identifying events with a big impact but low chance of occurrence won't necessarily lead to risk-control measures.

   This is illustrated by the Oct. 31, 1996, Fokker-100 aircraft crash in São Paulo, Brazil, where 90 passengers and six crew members were killed. The tragedy was caused by the jet reversal of one of the engines just after take-off, which Fokker estimated to be a practically impossible event with a chance of occurrence of one in 1 billion. Based on this risk approach, no specific measures were taken, such as training the pilots to respond adequately.
2. **Decision-making at known high risk.** The Challenger and Boeing examples describe situations in which the high risk of catastrophic incidents was known, and relevant expert recommendations

FIGURE 1

## Fictive example




were ignored or overruled. Yet, as mentioned, wrong decisions were made by ignoring the real risks, which ended in disaster.

Compared to organizations, consumers tend to act emotionally when dealing with risk. This is illustrated by a personal experience I had during the 2004 and 2005 terrorist attacks in Europe, when terrorists wore backpacks filled with explosives. I traveled to work on the train, so I frequently was around people wearing backpacks—which is not unusual. Rationally, I knew my chance of being injured or dying during a terrorist attack in the Netherlands was low. During that time, however, I intrinsically avoided potential risks by avoiding people wearing backpacks. Despite the low risk, my emotions won. And, of course, I wasn't the only one who reacted that way. During that time, people reported many suspicious items, which turned out to be perfectly safe.

If this emotional way of dealing with risk is reflected on the Boeing 737 Max situation, you can rationally conclude that the percentage of people who died due to a malfunctioning Boeing aircraft (compared to the total number of transported passengers) still is low, which means that Boeing can be considered a reliable aircraft provider. Due to the emotional effect of the crashes, however, Boeing lost many potential orders and must work hard to regain consumers' trust.

### Potential risk

Should organizations try to prevent incidents by taking measures, even if the chance of occurrence is low? The answer is, "Yes," but "It depends."

Incidents (described here as unwanted, rare events with big impact) can have huge consequences for consumers and providers, which implies that actively managing incidents is justified and pays off for both. When there is any possibility of loss of human or animal life, injury, sickness,

TABLE 3

# Maturity level example

| Potential risk coverage | Description | Maturity level |
|---|---|---|
| **Risk fully covered** | + **Potential risks are assessed and categorized systematically**<br>+ **Decisions to take control measures are based solely on determined potential risk category (occurrence chance omitted)**<br>+ **Implementation and the effectiveness of the risk-control measures is certain**<br>+ **Expert recommendations can't be overruled**<br>+ **Nobody has the authority to make decisions beyond the safety and well-being of people and animals**<br>+ **Nobody has the authority to make decisions that damage the environment** | **5** |
| **High risk coverage** | + **Potential risks are systematically assessed and categorized**<br>+ **Decisions to take control measures are based solely on determined potential risk category (occurrence chance omitted)**<br>+ **Implementation and the effectiveness of the risk-control measures is certain** | **4** |
| **Moderate risk coverage** | + **Potential risks are systematically assessed and categorized**<br>+ **Arbitrarily determined chance of occurrence plays a significant role when making decisions on need and implementation of control measures**<br>+ **Implementation of risk-control measures is certain, but the effect of the measures taken is uncertain** | **3** |
| **Low risk coverage** | + **Potential risks are assessed and categorized on an ad hoc basis**<br>+ **Arbitrarily determined chance of occurrence plays a significant role when making decisions on need and implementation of control measures**<br>+ **Implementation of risk-control measures is uncertain** | **2** |
| **No risk coverage** | + **Potential risks are not assessed, categorized, or controlled** | **1** |

or environmental damage, risk-control measures always should be taken. In other cases, it's up to the provider to decide.

Having said that, we can conclude that the chance of occurrence should be omitted when assessing risk and defining appropriate measures to avoid or reduce the risk. In this approach (referred to as the potential-risk approach), potential risks with big impacts always should be covered by risk-control measures.

So what does a risk management approach that doesn't consider the chance of occurrence look like? Let's use a simplified example of store-bought pizza.

**Step one: Identify the product's potential risks.** Assume the following potential risks have been identified:

+ The pizza is poisoned.
+ The pizza contains ingredients other than those claimed on the label.
+ The pizza slices aren't divided equally.
+ The pizza crust isn't crispy enough.
+ The packaging could be more colorful.

**Step two: Rank the potential risks (determine their impact).** For the purpose of determining the impact of the risks identified in step one, use the ranking criteria in Table 1 (p. 24).

**Step three: Rank the risk coverage.** For the purpose of determining the risk coverage, use the ranking criteria in Table 2 (p. 26). Omitting the chance of occurrence creates an opportunity to manage incidents such that the risks are prioritized not by calculated risk, but by potential risk.

**Step four: Determine the risk priorities and need for risk-control measures.** This depends on the mutual relationship between the impact and risk coverage. For illustration purposes, use the fictive example in Figure 1 (p. 27).

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**Note 1:** Because no chance of occurrence applies, all potential risks are subject to appropriate risk measures. In this example, the chance of the pizza being poisoned is irrelevant. What is relevant is to ensure there are no incidents of poisoned pizza.

**Note 2:** For the potential risk, "the pizza slices aren't divided equally," the risk measures are "recommended." For the potential risk, "the pizza crust isn't crispy enough," the control measures are "can be considered." This is because the control measures are subject to change, so their effectiveness varies over time, which is even more reason for concern when the impact is relatively high.

**Step five: Act according to the risk priorities.** This approach can be used for new or existing products. If high-potential risks exist, do not place the new product on the market, or pull the existing product from the market.

## The moral of the story

Because the chance of occurrence has been omitted, the potential-risk approach is advantageous when managing incidents with a big impact. But it's important to ask, "What is the added value of such a model?" The answer is, "There is none." The model itself has no added value. It is just a tool (like many others) that is intended to help.

Moreover, the potential-risk approach suffers from the same limitations as the commonly used risk model, such as the inability to identify all potential risk scenarios upfront, and the arbitrary nature[11] of determining the potential impact and risk coverage. The model is intended to protect consumers and businesses by enforcing risk-control measures to prevent incidents.

So how can the control measures be enforced? First, it's important to properly understand the benefits and necessity of dealing with risk by preventing incidents with a big impact. Fulfilling this condition leads to the most important element—namely, the right attitude toward adopting the potential-risk approach, which leads to actions such as:

+ Creating a proper organizational culture with room to manage incidents motivated by "quality first."
+ Implementing organizational changes regarding decision-making authorities. Ensure independent risk management by removing the possibility of making decisions that ignore the real presence of known or potential high risks.
+ Creating supporting infrastructure, such as adopting appropriate methods, tools, and procedures.

These steps should be implemented systematically and consequently, and, if properly implemented, will result in a high risk maturity level. See Table 3 for a maturity level example.

Finally, it must be mentioned that to benefit from the potential-risk approach (and any other), it must be applied systematically and consequently. This way, the provider will develop a certain maturity and become more and more effective and efficient at dealing with risk. QP

### NOTES AND REFERENCES

1. In this article, "product" also refers to "services."
2. In this article, "provider" also refers to "organization."
3. Henry Ford and Samuel Crowther, *My Life and Work*, Project Gutenberg, 1922.
4. In this article, "consumer" refers to any individual who uses products or services as a private person, such as a patient undergoing diagnostic research. For example, medical experts (such as radiologists) who use and purchase diagnostic medical equipment are not considered consumers. In this article, the term "consumers" also refers to "ordinary people."
5. In this article, "doing business" refers to the entire process of value exchange: from product creation until, and including, post-consumption activities.
6. Peter Drucker, www.quotes.net/quote/42717.
7. Fulfilling the intrinsic needs and expectations of consumers relates to the appropriate product attributes (qualities), such as safety, functionality, reliability, and look and feel.
8. Fulfilling applicable regulatory requirements, such as those related to Conformitè Europëenne (CE) marking for the European market, compliance with U.S. Food and Drug Administration regulations for the U.S. market.
9. Considering the expectations of the society as a whole with regard to people (such as child labor, underpayment of employees, and exposing employees to danger), nature (such as pollution of air, ground, or water and deforestation) and animal welfare (such as poor animal living conditions and misusing animals for testing).
10. Daniel Kahneman, *Thinking, Fast and Slow*, Farrar, Straus and Giroux, 2013.
11. In this context, "arbitrary" also means "sensitive to manipulation," whether conscious or unconscious.

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