

Preparing the Enterprise for a Pandemic

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Background

While estimates vary, the extent of the impact of a pandemic cannot be understated. Figure 1, below, provides a typical assessment for the United States pandemic casualty estimates provided by the US Department of Health and Human Services in the event of an actual pandemic:

Figure 1, US Pandemic Casualty Estimates¹

| | Moderate | Severe |
|------------------------|------------|------------|
| Illnesses | 90,000,000 | 90,000,000 |
| Hospitalization | 865,000 | 9,900,000 |
| Deaths | 209,000 | 742,500 |

While these numbers are disturbing, there is an additional ripple impact across the economy of any country where there is even a mild virus outbreak. The SARS outbreak in Canada resulted in 375 confirmed or suspected illnesses and 44 deaths, yet cost the Canadian economy in excess of \$2 billion. As a result of the outbreak, the restaurant and entertainment industry were battered, travel worldwide dropped dramatically and the health care system, at times, was stretched to the verge of collapse. The Toronto economy took years to fully recover. These impacts were not the result of individual infections; they were the result of the changes the infection brought to society as a whole. In 2006, the Congressional Budget Office estimated the US financial impact of a potential influenza epidemic could be between 1 and 4.5% of GDP.²

For an enterprise trying to prepare for a pandemic, the issue is not only what could happen to employees, but of equal importance — what will the impact be on regulations, the community and the public at large? By considering multiple elements can the enterprise prepare an appropriate response. This need has been heightened by the recent outbreak of H1N1, causing regulatory authorities worldwide to initiate pandemic programs.

An additional distinction needs to be made between the unique requirements of a Pandemic Contingency Plan and typical disaster recovery plans. Again, using SARS as a reference, the outbreak in Toronto lasted for 14 weeks (March to June, 2003). In the context of a pandemic, this is a short duration. By all

accounts, a pandemic could take a year to run its course, with individual sicknesses lasting 6 to 8 weeks. As a result, the contingencies that enterprises need to anticipate should be much more resilient and sustainable than in classic business recovery exercises. This is not a question of moving resources from one building to another; it is more likely an exercise in managing curtailed operations, and focusing on core business requirements on a global basis for a protracted period of time.

Section 1: Unmanaged Reactions to a Pandemic

“The real enemy during the SARS emergency in Toronto was *“fear of the unknown.”* It was this fear that encouraged stigmatization of businesses, ethnic groups and geographical locations.”³

In retrospect, the estimated \$2 billion loss experienced in Toronto was mostly due to this fear. Unlike Hollywood movies, this fear didn't simply bring about panic in the general population. It was institutional as well as individual. Significant entertainment personalities cancelled events to avoid Toronto, as did some of the most informed academic/professional groups, including medical organizations. In developing an enterprise-based pandemic response, it is not only the infection itself that needs to be responded to, but also the fear, misinformation and resultant behavior changes a pandemic will generate.

Some characterizations of the institutional response to an outbreak have been outlined by Michael Osterholm in the publication, *Foreign Affairs*, in 2005.⁴ These characterizations include:

- Reductions or suspensions of foreign trade
- Restrictions on travel
- Refusal of passage through smaller communities as they try to protect themselves from the spread of the disease.
- Social and political crises, destabilizing unsecured governments
- Nationalization or government control of critical industries.

These responses were observed in the flu epidemic of the 1960's and in the recent SARS outbreak of the 1990's. However, the increased globalization of our economies, the projected severity of the next pandemic, and public awareness (fears “that something is going to happen”) create a completely different dynamic.

For any enterprise to generate a pandemic response, it must first understand the reactions a pandemic will generate. Once understood, the organization is then able to formulate preemptive and responsive actions. Outlined below are potential reactions to a pandemic outbreak and a framework for building a response.

Section 2: Individual Reactions

As the pandemic progresses, businesses will be affected as people protect themselves and their families. This could cause:

1. Workers will become increasingly reluctant to travel to and from work, particularly if it means sharing a train, bus or airplane with others. Prior to the onset of a pandemic outbreak, increased travel by private vehicle, will cause more congestion in metropolitan areas.
2. Lack of knowledge and media hype will affect larger travel decisions, so travel the originating area of the outbreak, even if the outbreak is highly contained, will decrease. (During the SARS outbreak some US consultants refused to travel to Calgary, though there were no outbreaks there and the distance to the Toronto epicenter was 2,060 miles.)
3. A school with a single suspected case of infection may be abandoned by fearful parents.
4. Entertainment venues will see notable declines affecting restaurants, sports events, festivals, theatres and movie going.
5. Stockpiling and hoarding will increase. This will escalate as just-in-time delivery mechanisms break down, and fresh produce, meat and dairy products become more difficult to find.
6. Brick and mortar based consumer shopping and service access will decline. There will be fewer visits to banks, grocery stores and shopping malls.
7. There will be an increased demand for Internet and call center based service delivery, including banking, catalogue shopping, delivered prepared food, and utility payments.
8. There will be increased demand on Internet Service Provider (ISP) and phone based services. The ability of the Internet and individual ISPs to support the increased load is uncertain.
9. Requests for leniency with bill payments will increase. Personal bankruptcies and payment delinquency will increase, as people are laid off, can't work, or refuse to work.
10. Those that do work will refuse to work in close proximity to others. Face- to- face meetings will be shunned.
11. Individuals will attempt to work wearing face masks, latex gloves, and with regular sanitizing of their work environment.

Section 3: Corporate Reactions

From a labor supply perspective, The Economist⁶ characterized the ever increasing reliance on very lean just-in-time supply chains and logistics as a dangerous thing. The article cites research by Vinod Singhal at the Georgia Institute of Technology that showed an average 8% loss in share price in the first 2 days following an announcement of a supply chain issue.

In the context of a pandemic, the trained staff used to keep businesses operating are the “just-in-time” inventory that are most exposed. Most organizations have no surplus/reserve capacity in their allocation of resources to tasks. All institutions will have to reshape operational capability, based on up to 20% - 40% fewer staff for a sustained period of time. With even 20% of staff sick, the following functions can be severely stressed:

- Call centers
- Healthcare systems
- Police and court systems
- Logistics companies, as described above
- Government services
- Assembly line manufacturers

A number of organizations have assumed they can rely on temporary or outsourced agencies during the crisis. However, as a pandemic is a geo-social rather than institutional crisis, those same agencies will experience larger demands for resources, and experience all the same shortages.

Potential travel and trade restrictions can also limit the national and international flow of goods. In anticipation of supplier restrictions, manufacturers might attempt to stockpile materials in advance of rumored restrictions causing surges in commodity prices.

When the stockpiled materials needed to manufacture products dwindle, when the logistical resources are not available to ship products between factories and to distribution centers; when consumers focus on purchasing only what is core to their day-to-day needs, whole sectors of the economy can be affected.

Section 4: Building a Framework for a Pandemic Response

As a starting point, a pandemic must be thought of as a long-term disruption that will pass through various phases, and the demands of each phase on the enterprise are likely to be different. Enterprises will need to generate multiple responses to a pandemic as it emerges, progresses and declines. An initial categorization is provided by the five-phase approach suggested by the Financial Services Sector Coordinating Council for Critical Infrastructure Protection and Homeland Security in the United States. Their phase classifications are:

- I. Normal operating model with no known outbreak
- II. An epidemic declared in a foreign location

- III. Isolated outbreaks confirmed in the country/region
- IV. Outbreaks in critical departments within the organization
- V. Apparent subsiding of the pandemic but with risk of follow-on waves remaining high

Enterprises may find it necessary to sub-divide phases III and IV to better isolate the unique individual and corporate impacts. For example, phase III might be better thought of in terms of:

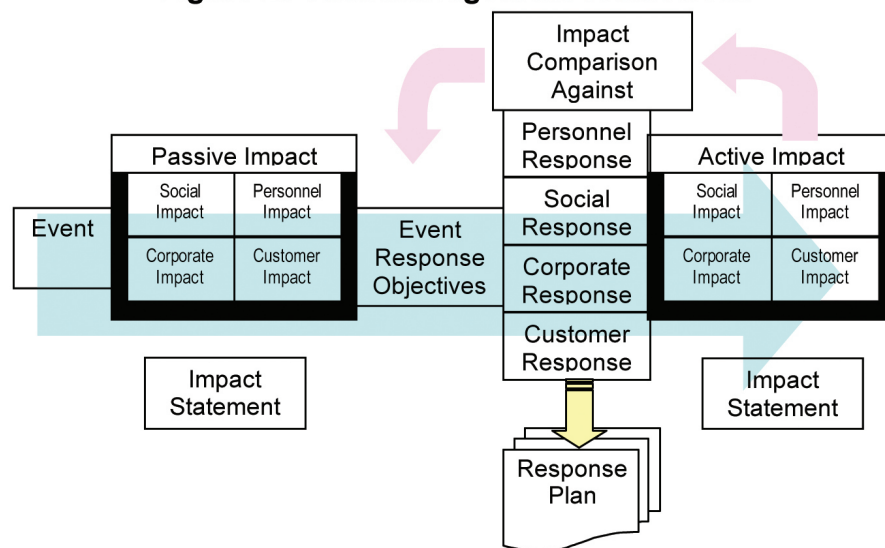
- III.A. The first regional case is identified
- III.B. Transmission to multiple cases in the region has occurred.
- III.C. In-company cases have been identified.

Likewise, it may also serve to break down phase IV to consider the progression from when an individual in a critical department has been infected to when a critical department's ability to function is compromised by the extent of infection among staff.

The determination of the number of response phases needed in a plan is highly dependent on the degree to which the enterprise is likely to be affected by the progression of the disease in-company, regionally, nationally and internationally.

To build an effective response in each phase, the enterprise must (1) think of the pandemic from a variety of perspectives and (2) attempt to address those perspectives by developing contingencies that will have the greatest impact on corporate objectives for that phase of the pandemic. A Risk Management Framework, depicted in Figure 2 below, provides a schematic for the planning exercise.

Figure 2: Risk Management Framework



This framework provides for the iterative determination of an appropriate set of responses within each phase, (or as identified in the schematic), event. Through each iteration the resultant impacts are compared to the objectives set for that phase. If the projected impacts following a proposed response do not align with the objectives, then the enterprise needs to (a) modify its objectives or (b) consider a more involved response. When the enterprise has achieved what it believes is reasonable alignment between actions that can be taken, their impacts, and the objectives for the organization at that stage of the pandemic, the collected responses can be extracted and built into a plan for that phase.

In this framework, the onset of a pandemic event is expected to bring about a set of reactions or impacts. These reactions, identified as Passive Impacts, are defined as the consequences, impositions, or constraints placed on the enterprise without the organization being actively engaged in the response. Some of these impacts are identified above in the section on the Unmanaged Response. This should be contrasted with the Active Impact Assessment, which details the expected outcome following the responses executed by the enterprise.

The impacts themselves are grouped under four categories:

- 1. Social Impact** — the consequences that an enterprise needs to consider from a legal/judicial point of view as well as from a moral responsibility perspective. (In the Active Impact Assessment this can also include the coordinated actions taken by government institutions and the business community.)
- 2. Personnel Impact** — the consequences of an event that are directly associated with the people who work within the enterprise.
- 3. Corporate Impact** — the consequences imposed by the enterprise's mandate, obligation to stakeholders, or suppliers.
- 4. Customer Impact** — the consequences imposed by the actions of the general public and the customers that enterprise serves.

When the Passive Impact is understood for a particular phase, the enterprise is in a much better position to define response(s) to those events. This begins with the formulation of an overall response objective. As the pandemic progresses through different stages, the impacts an enterprise has to contend with and response objective(s) change. Earlier stages might have an objective of continued operation. Alternately, a more catastrophic phase might have business operations severely curtailed or the enterprise may substantially change its operational profile. As the objective(s) are defined, responses can be proposed in each of the impact categories identified above. These responses form the basis for the pandemic contingency plan that the enterprise will create. As responses are created, they are assessed in terms of the effect they have on the four impact types. If the responses and the resultant impacts fall short of the target objectives, some combination of the objectives or responses must be changed. When there is alignment between objectives, responses, and impacts, those responses are structured into the plan for that stage of the pandemic.

Two other elements that will need to be developed are the Passive and Active Impact Statements. They form the basis of upper management's understanding of the constraints placed on the enterprise both without taking any action and following the enterprise's response. From there, management can evaluate the appropriateness of the objectives, the efficacy of the response, and the costs of achieving the results.

This framework has the advantage of being able to look at a pandemic in terms of particular phases of evolution. The occurrence of each phase could trigger the initiation or escalation of a particular plan. As a pandemic evolves and brings on a new set of consequences, a different or expanded plan can be put into place.

Section 5: Constructing the Response

Unmanaged reactions as described earlier, demonstrate the wide range of concerns contingency planning needs to address. As a consequence, it is essential that the team tasked with building the response be multi-disciplinary. Most organizations that have considered pandemic preparations have asked the I/T organization to lead the response, as they are customarily the owners of disaster recovery capability. However, as noted in the National Strategy on Pandemic Response, the impacts are much more likely to be long-standing and enterprise-wide than business continuity initiatives anticipate. Consequently, the determination of the strategy should be championed by executive leadership.

Impact assessment needs to involve financial, operational and IT leadership as well as legal, HR and other corporate functions. In building responses, the enterprise has to anticipate the need for significant operational changes. An example of a strategy might be to curtail most marketing and sales activities for an expected period of 6 months or more. As a consequence, the plan will most likely include formal discussions around shareholder value.

The extent of the operational change needed, has led organizations to anticipate significant changes in behavior. Some examples include:

- Instituting teleworking, so employees can work from home.
- Curtailing sales operations and redirecting those resources as reserves for other critical functions.
- Massively increasing self-service functionality.
- Retaining sequester facilities in more remote geographies to house and support essential staff for extended periods of time.
- Moving current document management to on-line tools to reduce materials transfer.
- Creating an internal courier system with drop-box delivery and pick up mechanisms.
- Creating a staging area in shipping and receiving where all shipments will be held for a period of time to kill viruses inadvertently transferred to materials.

The intent here is to provide an indication of the range and degree of mitigation to consider.

Section 6: Conclusion

Clearly, none of the planning, mitigation measures, or the efforts outlined in the Economist to increase supply chain resiliency, will make the pandemic a non-event. In the event of a world-wide pandemic, the extent of the casualties and the economic consequences will almost certainly be severe. The collaborative planning and

the detailed response generation outlined above will be essential for organizations to understand where their capabilities need to be strengthened and to make the necessary changes. While information technologies form a critical part of the organization's ability to be resilient, it cannot build that resiliency without an understanding of what the business needs as a pandemic progresses.

References

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