

Communications Solutions for Pandemic Planning

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Section 1: Pandemic Preparations

Current global concerns about viruses such as the H1N1 (a virus recently transmitted from pigs to humans) serve as reminders to all of us that we need to consider implementing some definable strategies to diminish the effects that issues such as pandemics can have on our businesses. To date H5N1 virus (a strain of the influenza virus commonly referred to as the Bird Flu) has been the most prevalent. However, the surprising emergence of H1N1 has caused a human-to-human outbreak, raising the WHO Pandemic Alert to 5 on a 6 point scale, but its complete impact has yet to be determined. From a business perspective though, enterprises are challenged with determining how to mitigate the risks pandemics can potentially cause.

This paper explores the business risks posed by one aspect of a pandemic: how to handle communications in this critical time. It also suggests some ways for enterprises to limit the economic impact of such a disaster by adopting a flexible communications architecture. Such planning would for instance allow employees to work at home to avoid risk, or to move critical operations to areas less affected, significantly mitigating risks for enterprises and employees. Pandemic preparations fall into two basic categories: Short Term - when facilities may only need to be temporarily evacuated; Longer Term - when operations may need to be re-located for an unspecified duration of time.

Section 2: Preparing for the Future

Social Distancing

Social distancing defines a set of practices that reduce the likelihood of two people exchanging a pathogen. If contracting a disease is directly associated with proximate contact to a contagious carrier, the more those contacts are reduced, the more the chance of transmission falls. Mexico recently adopted this strategy on a dramatic scale, banning all but essential public venues for five days in Mexico City. This strategy, adopted informally across Mexico, seems to be having a significant impact on incidence rates.

Minimization of employee participation forces us to consider what to do to disengage an employee from a required operation, and further, during the peak of a pandemic, which business processes can or should be discontinued. In a

pandemic that results in very high sickness rates (morbidity), and death rates (mortality), it is highly unlikely that the enterprise will be able to continue to operate in its normal mode. In addition, the social and business climate may force companies to reconsider its interactions in the market. Absenteeism, triggered by fear of exposure and dependent care needs, will exacerbate the human impact. Companies must plan for triaging business functions to focus on core operations, with a drastically reduced employee pool.

These methods will not prevent a pandemic; they have the potential to lessen its impact. And these steps should not be viewed solely as risk mitigation strategies. Implementing tools that automate core processes and permit social distancing can provide significant value to the enterprise, both before and after a pandemic. As a principle of operational efficiency, the extent to which an enterprise can disengage the individual employee from automatable processes has a direct impact on the cost of delivering that service to a customer.

The cost of servicing a repeatable business process via an IVR versus a contact center agent evidences this. In a pandemic environment, customers will be much more inclined to value a means of conducting business without direct employee-to-customer contact. That positive perspective will be carried forward after a pandemic.

Tools for Future Pandemics

Historically, corporate facilities have been modeled on consolidating significant resources into a single location to optimize access to expensive Information Technology (IT) assets and promote rapid communication. From the perspective of a virus, however, the more densely populated a square foot is, the more hospitable it is for propagation and contagious spread.

The continuing evolution of technical capabilities, substantially challenges that economic model. Voice over IP (VoIP) and more recently Session Initiation Protocol (SIP), have enabled corporations to operate, collaborate, and transfer data, efficiently and inexpensively on a global basis. This drastically reduces the need for face-to-face interaction. SIP offers the additional advantage of providing a single mechanism regardless of the media being used (voice, chat, video, mobile), further simplifying delivery.

Taking advantage of these tools provides economic returns today, with the added benefit of helping your enterprise build in Enterprise Resilience.

Globalization of Reach

Using an IP infrastructure, groups globally can have their telephony needs met by fewer installations of IP or SIP hubs. As a consequence, there is no manual or contrived mechanism for determining how best to route a call — all resources with equivalent skill are considered equally capable of addressing a contact regardless of location, nationally or globally.

The implications of this global reach in a pandemic are significant. A pandemic is expected to traverse geographies in waves, when it peaks in one location, it may not be prevalent in another. Using Avaya technology, the determination of whether a call should be addressed in Boston, MA, Oahu, HA, or Sydney, Australia can be made automatically. If agents log in, regardless of location, their predefined skill set becomes the only criterion that needs to be considered.

Disaggregation of Corporate Facilities

Formerly, to provide comprehensive voice communications services in a new location required an expensive infrastructure build out. This expense often resulted in those locations that could only be staffed with fewer resources (as dictated by regional business volume) being served by more restricted voice and data services. With a SIP-based communications infrastructure, such as Avaya Aura™, those services can be centrally located and delivered to any location adequately served by wide area and local area networks (WAN and LAN).

Consider then, a crucial operations facility staffed by a thousand or more employees. In a pandemic, imposed travel restrictions and quarantines, public transit breakdowns and fear of prolonged public / large group exposure can put intense pressure on the ability to staff that facility. In addition, the sheer collocation of these employees presents a heightened flu risk. Localizing and distributing these resources throughout a broader geography can alleviate these risks. Even if a limited number of locations become quarantined by a public health order, others can continue to function. In contrast, an organization whose business model is built on a limited number of large call centers, may be overwhelmed when one of the centers is forced to close for months. Companies with dense operations must create a plan for disaggregation, should the need arise in the future.

Potential locations for disaggregation include bank branches, leased properties in a strip mall, regional sales offices, and other street-facing outlets. By disaggregating your employee resources into smaller clusters operating closer to their home communities, the enterprise can mitigate expected challenges associated with dense urban cores. Today communications system may be deployed rapidly to locations all across the globe and linked together with robust and reliable functionality over packet switched connections.

Employee Virtualization

The highest standard for disaggregation, can be called virtualization. Essentially, virtualization suggests that any information-focused employees can effectively conduct their work in any location where they can access a telephone and a high speed Internet connection. (Information-focused employees are defined as those whose responsibilities are restricted to the management and manipulation of business data, and not physical products.) The most common venue for the virtual employee is the home-based office.

In a pandemic, working-at-home significantly reduces the risk of contracting flu by minimizing exposure to carriers either in transit or at the work place. It enables an employee to be productive in the face of a school closure, quarantine order, or travel restriction. It makes implementing temporary shift work initiatives, in order to accommodate increased customer demand or resource gaps, simpler. Notably, there is a consistent set of case studies and evaluations to demonstrate that work-at-home programs increase employee productivity.

The work-at-home employee is positioned as a cornerstone of the majority of current pandemic response plans. Avaya has invested significantly in the development of technologies that permit communications in the home environment, and have developed practices around shaping the business, operational, control, and facility requirements to maintain an effective sustainable work-at-home model. Unified Communications enabled softphones, (browser-based or software clients) provide a desktop communications experience to virtual employees. Employees' desk phone numbers will ring at their virtual offices and they can have critical PBX features, such

as transfer, hold, conference, etc. These solutions also give virtual staff access to corporate contact directories, presence information and video conferencing. Softphones ensure workers who are physically isolated from other employees are still able to communicate effectively with co-workers and clients.

Teleworking technologies are not limited to traditional information workers. Contact centers — typically with a large number of employees in close quarters — can benefit from disaggregation. In addition, businesses may be more reliant on contact centers as some customers become less willing to conduct business in person. Unified Communications softphones enable contact centers to leverage home-based agents and deliver the advanced contact center capabilities agents require. Businesses can also equip home-based contact center agents with desktop video conferencing to empower customers and agents with visual communication when actual face-to-face communication is limited.

Section 3: Tools to Reduce Employee Participation in Core Processes

If social distancing is about limiting the risk of infection amongst employees to help sustain core operational capability, this section considers how to reduce reliance on employee involvement in those processes.

Self-service Technologies

Self-service technologies are not a new development, but their use within an enterprise should be reexamined in the context of a pandemic preparedness plan. Three elements support this reexamination.

First, most current Interactive Voice Response (IVR or sometimes called VRU) implementations are based on a model of cost-reduced service delivery for high volume transactions in a commodity customer, or non-segmented customer environment. Pandemic response preparations demand a different set of evaluation criteria, such as social impact, core sustainability, etc. Cost reduction drivers may give way to revenue retention drivers, and mass market bases may need to be shifted towards mid or high market customer requirements.

Second, significant technical advancements have been made that allow organizations to move responsibly beyond Dual Tone Multi Frequency (DTMF) IVR environments, to develop applications of greater sophistication. (DTMF in this context can be thought of as being akin to touch tone based beeps.) This permits application of self-service in a broader range, and more complicated range of business functions than previously possible.

Third, a pandemic will likely change the consumer's disdain for self-service. To date, bad designs and a natural tendency to prefer live voice interaction have often limited the extent to which companies use IVRs. It is reasonable to expect consumers will actually prefer less face-to-face interactions, and will acknowledge the inability of a contact center to retain full staffing in the midst of a pandemic. Using IVRs more diligently may be seen as a social responsibility, and almost certainly will be seen as a mechanism for reducing infection risk.

Companies need to examine how self-service technologies can be used to support internal operations as well as customer-facing functions. An IVR function should be considered, for example, to report and monitor trends in inability to work because of influenza symptoms, influenza diagnosis, dependent infections, or quarantine orders. A similar function would likely be invaluable in public health administration. In general, many institutions could benefit from asking:

- Could we be doing more with our IVR applications?
- What role do they play in helping us manage during an outbreak?
- How will adoption change in a pandemic and post-pandemic world?

Communications Enabled Business Processes

Typically, when a significant event occurs in a business application, the event is signaled via a report or on-screen messaging to an appropriately tasked employee. That employee may then engage other employees, customers or suppliers in determining an appropriate response. In banking this is true for an outage, error conditions in business processes, a sudden change in stock market performance, or a Suspicious Activity Report (SAR) event.

Avaya has developed a solution set that helps remove the human latency in the initial reporting to the individual employee, and the determination of an appropriate response, as well as the ability to remove the dependency on that initial employee all together. This solution, called Avaya Solutions for Communications Enabled Business Processes (CEBP), embeds communication services in an enterprise's business systems.

When a specific event occurs in a business system (such as a drop in the inventory level of a critical manufacturing component), embedded rules in the business system are initiated and communication services such as voice notification, contact initiation, conferencing etc., are initiated using a range of media. Avaya Communication Process Manager software within the business application manages the automated communication.

In the example of an inventory drop of a critical component, the inventory tracking software could be connected to the communication infrastructure through Avaya Communication Process Manager, and an email or text message could be triggered to a group of people who could take the necessary steps to remedy the situation. In the event of a pandemic, this functionality could be leveraged to advising the enterprise's most valued client of an investment opportunity, change in commodity pricing or supplier shortage without a person initiating the contact.

Such tools could play a significant role in managing infrastructure outages, just-in-time delivery disruptions or medical staff alerts. From a pandemic point-of-view, they allow the organization to reduce reliance on an individual report recipient, and allow for the potential or resource reallocation.

Mobile Communications Solutions

Avaya's portfolio of communications tools allow for rapid deployment of personnel either in concentration or across geographically disparate distance. The Avaya Mobile Communications System (MCS) is a rapidly deployable and easily reconfigurable communication system. Based on Avaya Communication Manager, the MCS gives organizations the full functionality of your enterprise based systems. The MCS may act as a stand alone unit, or it may act as a gateway off of your enterprise infrastructure.

The Avaya MCS is fully configured with multiple options for connectivity to accommodate whatever situation you may encounter. The MCS may be connected to traditional network resource, new IP based options and even non-terrestrial options including satellite. Optional components further expand your flexibility with value-added applications.

Avaya mobile communications solutions includes other options from solutions that allow single users who may be connected to a wide range of available options from able modems up to satellite connections. On the opposite end of the spectrum, full temporary office operations can be replicated with a large number of choices of servers, gateways, endpoints and applications.

Infrastructure Consolidation with Avaya Aura

Should a pandemic occur, its immediate impact is on resources, not core facilities or IT infrastructure. However, as a pandemic progresses, high absentee rates, travel restrictions or quarantines may expose that infrastructure in terms of degraded regular maintenance. Obviously, the more servers, links and tools an organization needs to operate their business the greater the cumulative risk.

Avaya Aura SIP architecture for voice services, combined with its integration with adjunct technologies, consistently results in limiting the both the size, and as importantly, the geographical extent of physical infrastructure implementations. Embedded in the infrastructure is a sophisticated set of monitoring and self-healing functions that address up to 98% of the infrastructure's alarms and warnings without human involvement, and 73% of major outages are avoided altogether. When a technician is required, the advice to Avaya field staff is automated and generated by the systems themselves, often before enterprise technicians are aware of any concern.

Automated failover between hubs, enterprise survivability, and local survivability in the event of network outages can be deployed for a large number of business users, regardless of whether they work at a corporate site, branch location or a home office.

The outcome for the enterprise is the ability to support a deployment of a comprehensive voice services solution to more than 20,000 users with a little as two technical support staff. With remote support capabilities, during a pandemic these resources can be shared to support multiple deployments on a rotating basis.

In short, an architecture leveraging the flexibility of SIP, in and of itself, can represent a key capability in the development of a pandemic plan.

Section 4: Placing the Solutions in Context

Preparing for a pandemic will require a significant change in the business continuity philosophies of most enterprises. While available staff can fall by 50 or 60% in some cases, customer demand for service may actually increase, and at the same time physical assets remain relatively unaffected.

Medical and scientific responses will and need to be actively pursued. However, it is clear that government, communities and businesses must be able to collaborate to mitigate the impact. For businesses, the most critical first step will be determining how to support core operations with depleted resources. Social Distancing planning and decreasing reliance on employee involvement need to be central to that strategy.

In a post-pandemic world, there will almost certainly be a “new normal”. Those enterprises that take the lead will have a significant advantage over those that simply follow suit. To that end, these solutions should be thought of as having dual capabilities and benefits, enabling enterprises to respond to a pandemic as well as advance everyday business capability.

Section 5: References

¹ www.cidrap.umn.edu

About Avaya

Avaya is a global leader in enterprise communications systems. The company provides unified communications, contact centers, and related services directly and through its channel partners to leading businesses and organizations around the world. Enterprises of all sizes depend on Avaya for state-of-the-art communications that improve efficiency, collaboration, customer service and competitiveness. For more information please visit www.avaya.com.

The Avaya logo consists of the word "AVAYA" in a bold, red, sans-serif font. The letters are closely spaced, and the 'A's have a distinctive shape with a small gap at the top.

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05/09 • MIS4263

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