# Celedon Partners Ensure Client's Ability to Generate Revenue During Cloud Downtime with Azure Disaster Recovery Configuration

One of the key value generators enabled by the Internet is the ability to sell online and access line of business tools anytime, anywhere. This enables companies to sell when customers are willing and ready to buy, instead of limiting their choices to business hours.

To ensure that their systems were always available, businesses in the past would run multiple, redundant pieces of hardware within their private networks. Today's cloud providers can take advantage of economies of scale to operate hundreds or thousands of servers that run applications for whole groups of customers at a lower cost.

While this allows businesses to reduce the cost and complexity of their own IT system, it also increases their reliance on their cloud provider and the integrity of their network. Major cloud providers typically guarantee at least 99.9% availability, which covers the vast majority of an organization's needs, but still means that their ability to access important applications could be down for as many as eight or more hours a year before Service Level Agreement scenarios become active.

## The Issue

After a cloud data center outage in Western Europe impacted services for nearly four hours and affected their ability to generate revenue, a pharmaceutical supply company began to work with Celedon Partners to determine the best way to ensure that disaster scenarios at their local Azure data center wouldn't have such a dramatic impact on their ability to conduct operations.

After understanding the customer's requirements and business, Celedon consultants provided the customer with three options:

### Build and maintain a cold offline data center in another region

In this scenario, Celedon would help the customer build an offline data center that would act as a mirror image of the existing servers hosted in Azure. The offline data center would then be brought on during outages. This option was disregarded due to the administrative difficulty involved with regularly testing the offline servers.

### Asynchronously replicate data at another Azure location and manually failover

Celedon's recommended choice due to its combination of practical efficacy and cost effectiveness, this method involved connecting a second Azure location via VPN and asynchonously replicating from the original data center to the new location in real time. If the original, live database failed, the customer would only have to manually failover their SQL database.

### Synchronous database replication and automatic failover between Azure locations

Instead of routing from a primary database to a secondary location, this method would involve live replication between multiple servers and automatic rerouting during outages. However, this would require custom code, making it the most expensive solution to get up and running.

## The Solution

After consulting with internal stakeholders and Celedon consultants, the company followed Celedon's guidance and decided to open another location in the United Kingdom with constant one way replication. The technical work involved in bringing up the new location took a matter of weeks, an act that would have taken months to do if the businesses had decided build out an on premise data center due to logistics and administrative overhead.

One challenge was to ensure that the implementation in the new data center was prepared to handle traffic in the case of a disaster in the original datacenter. While Celedon was confident in its configuration and implementation, a complete disaster is difficult to mimic or consistently test.

Most disaster recovery implementations keep dynamic routing off, preferring to wait until an outage to initiate the failover process and send user requests to the backup datacenter. This risks the failover not working due to changes in the configuration of the data centers or unevenly applied updates from the IT team.

Given this, Celedon decided that the best course of action would be to simply make the second location a live server and use Azure Traffic Manager to route users to it if they were closer or their network path was less congested. This would make it easy to recognize when errors were occurring in data replication and ensure that the data center was properly configured for use at all.

## The Result

The client can now rest assured that outages at their primary Azure datacenter will not affect their ability to do business and generate revenue. If their primary datacenter in Germany is inaccessible, the failover process will initialize and

In addition to acting as a disaster recovery server, the decision to implement one way replication to a second datacenter and route users to it helps the company route users to data more efficiently. Celedon also implemented a series of load balancers outside and inside each datacenter to ensure that they routed users and delivered data at maximum efficiency.

Celedon consultants continue to support and monitor the company's cloud implementation and are involved in projects to upgrade the company's servers. Celedon is also involved in helping the company upgrade their internal business systems to maximize their efficiency and profitability.