

Deployment Scenario: From Siloed Data to i3 Managed Data Fabric

The following deployment scenario assumes that a CIO is seeking to both reduce their operational costs so the development team can focus more on new projects and less on maintaining legacy systems. Further, the CIO understands that the company has some interesting data assets that are locked in application sandboxes and that this data would allow the company to increase revenue and customer satisfaction if properly utilized. The CIO's primary goal is to reduce costs but as a secondary goal, they want to explore growth opportunities that they have not been able to pursue due to lack of time and data.

Rather than trying to deploy an entire data infrastructure in one-shot, the CIO has selected a subset of the larger network, applications with higher operational costs than average operational costs that use rapidly changing data. The objective is to use the operational savings from this network subset to fund additional cutover projects in the future.

The selected subsystem includes 3 data consuming applications and 3 data generating applications. In addition, 32 IoT devices will be connected to the network infrastructure and 16 IP video cameras.

For budgeting purposes, the CIO assumes the cost for a regular developer will be \$100/hour and an advanced development team member would be \$200/hour. Overheads costs for the team are 30% and 20% of the developer's time is attributed to administrative issues (meetings, reports, etc). This results in a fully burdened cost of \$156/hour for a regular developer and \$312/hour for an advanced developer.

The CIO estimates the development team requires 32 hours per year to for ongoing support from an advanced application and an additional 25% to test these efforts. For each IoT device and video camera, the development team requires 16 hours per year for ongoing support from a regular engineer and an additional 25% to test these efforts. Together these costs add to \$948,480 per year.

In addition to the above costs, the application and device software needs to be periodically updated based on the vendor's release schedule. The CIO anticipates the applications will be updated twice per year while the IoT and camera devices will be updated once per year. The application updates require 16 hours per application and the device updates require 8 hours per device. An additional 25% time requirement is needed to retest these devices as they are upgraded. Together these costs add to \$224,640 per year.

These activities (and expenses) are needed to keep these existing systems updated and running. However, in an effort to keep the IoT devices current with technology, the CIO anticipates removing 2 IoT outdated devices adding 4 new IoT devices per year. They also expect to remove 2 outdated cameras and adding 4 new cameras per year. 16 hours are required to install a new device and 1 hour is required to remove an outdated device for a net cost of \$50,700.

The CIO understands the importance of documenting incoming and outgoing data resources. To accomplish this, the staff has been assigned the responsibility to keep messages flows well documented. Given the level of system evolution, they have allocated 160 hours from an advanced developer to this task. They have also decided to carry out quarterly audits of their data activity in order to ensure that corporate data usage policies are being met (320 hours of a regular developer). Together, these tasks account for a net cost of \$499,200.

The CIO has noted that there are periodic requests to connect these data sources to external partners. The nature of the partners varies in that they could be supply-chain partners, distributors, and in some cases, even regulatory officials. The expectation is that their staff will need to handle 4 such requests per year and that each request requires the development of a new API and integration with the external partner. API development requires 320 hours and integration requires an additional 160 hours from senior staff. This line item accounts for another \$374,400 of the CIO's budget.

The CIO's staff is considered a support function within the larger organization. That means they have to respond to requests from the departments they support on a timely basis. The CIO is estimating that for any deployed system, these support costs equate to 40% of the development budget, or in this case an additional \$838,968.

The net cost of continuing to run such an operation requires a budget of \$2,936,388.

Once the CIO had a full understanding of the amount of money that was being spent on these legacy systems, he was disappointed. His frustration only grew when he added the annual software licensing costs to these numbers. Compounding the issue was the fact that a limited number of staff members had been trained on these systems which meant the problem was not simply a budget problem but that if key personnel were engaged on other projects, they might have to use outside consultants to meet project deadlines. If outside consultants were required, these costs could easily double.

Luckily, the CIO was aware of the work that i3 Systems has been doing and they reached out to see if i3 could help. What they learned was that because i3 takes a toolkit assisted approach to supporting API interfaces, the cost to create API interfaces is dramatically reduced. Even more exciting was the fact that because i3 has segregated data-ownership issues from data connectivity, the IT department was able to delegate the establishment of data connections to the data owners while the IT department focused on enabling the data-exchange environment.

The tools that allowed the IT department to monitor the data flows also served to reduce support and data audit costs.

Ultimately, when the same scenario was costs out under an i3 operations paradigm, the CIO found that their estimated operational costs would go from \$2,936,388 to \$139,854 – a whopping 83% reduction in operating costs. When the CIO dug deeper into the data, they began to realize that every time something in their data access network would change, it was forcing the IT department to make similar but different changes to every application and data source. This was resulting in a lot of redundancy of effort. When the possibility of adding an i3 based data infrastructure to the system, it essentially virtualized the API management and support problems thereby allowing operational updates to be applied across the organization.