THE ROLTA ADVIZEX CLOUD JOURNEY

MICHAEL MESSINA, SENIOR MANAGING CONSULTANT
SRIDHAR AVANTSA, DIRECTOR, ORACLE INFRASTRUCTURE SERVICES.

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Who Are We?

For the past 41 years we have partnered with our customers to accelerate the adoption of new Information Technologies to create business value. Our passion for Information Technology is guided by our vision of:

"Customers for Life"

Our innovative solutions are designed to meet your individual business needs. Our people bring deep technical expertise and experience to develop lasting business relationships. Our deep heritage in both Applications and IT Infrastructure are essential elements of our approach to developing innovative solutions. Today, it is the further integration of Applications and Infrastructure that unleashes the power of Cloud Computing and our CloudFusionX solutions.

Rolta AdvizeX has practices that cover a wide range of organizational IT needs. This ranges from Infrastructure (Network/Storage/SAN/Servers etc.) to technology-based practices (VMWare/Oracle/Microsoft/Security/Cloud advisory and Disaster Recovery Planning). These practices cover the implementation projects as well as advisory projects.

As a growing and expanding organization, we have had to (and continue to) define our priorities and objective as well as ensure we have the appropriate framework for scaling our existing platform. Our Cloud Journey is reflective of the strategic and decisions of planning for growth. The cloud presented a new paradigm and options to consider as a part of developing the long-term plan.

Cloud Feasibility Assessment

As it happens, Rolta AdvizeX has a specific practice focused on helping organizations understand and navigate the path (often confusing) from on-premises / data center-based strategy to a cloud strategy. There is no single footprint for all organizations. Rather, as those of us in the consulting world like to say, "It depends".

Our cloud practice helps these organizations work through the "It depends" question. The answer is unique to each organization, driven by the organization's core business, expertise, operations and processes that matter (i.e. those that contribute directly to the bottom line), and meeting business and organizational goals.

The plan is to understand the business objectives, the structure of the business (business units) that will drive those objectives and the IT needs of these business units. Once we have this information, we just follow the trail of crumbs and define the organization's IT cloud strategy (or even lack thereof). We applied the same cloud feasibility assessment to our own business as we would have done with a client.

Overall Cloud Readiness

What does "Cloud Readiness" mean? In short, Cloud Readiness is a measure of the impact of and effort required to move the organization (and the applications / systems used to conduct business) to the cloud.

- Are there specific business requirements or constraints that render the move to cloud as inefficient or infeasible? Certain industries require certain level of security /auditing that could sometimes be cumbersome when deploying to the cloud. We need to understand these

requirements and their implications. Take security / auditing for example, it is not that these cannot be achieved on the cloud, it is more about what it would take to achieve.

- What limitations do the existing applications limitations create? Some applications are not written such that they cannot support the cloud paradigm. For example, web / mobile access capabilities.
- Why should the organization even consider the cloud? In other words, what is the business value of moving to the cloud? What is the fiscal impact and time line for such a move?

Our business involves working with customers around the world, working on customers' systems and having consultants spread out around the world. In other words, owning and running our own data center facilities did not provide any inherent value add to the business. Our data center footprint was not very large and as mostly used for supporting internal organizational processes. These processes mostly would tend to be coordination and back office processes in nature. A very small group of the technical staff (below of 5%) was involved in the maintenance of the internal systems. Rolta AdvizeX also had a mix of custom in-house built applications with some third-party applications in use to support the organization's goals, business and processes; however, most of these were hosted and managed using "on-premises" hardware.

Furthermore, in our case, the move to the cloud seemed to be great fit, as it allowed us to focus on what we do best and do it right. As a result, the organization embraced the value of moving to the cloud. The next step was to understand what to move and how.

In other words, the organization needed to build a Cloud Strategy. To do this, we needed to do two things:

- Understand what specific aspects to focus on.
- Understand and define the cloud strategy for the organization.

Identify Critical Business Focal Points

Rolta AdvizeX is in the business of providing IT infrastructure and integrations services. As a service-driven organization, our people are our most valuable resource. This would include the Sales teams, technologists (Pre-Sales and delivery) as well as the supporting services (Accounting / HR / Marketing / etc.) teams. The results of the self-assessment identified several areas where cloud opportunities /options were strongest, which is where we focused our attention:

Cloud Managed Services – Delivery Portal

Cloud Managed Services is a service area that has generated a lot of success for Rolta AdvizeX and is continues to grow as we expand our service offerings. This success has been due to our technical expertise as well as continued customer-centric focus, which allows us to become a trusted advisor rather than just a service provider. In other words, we need a solution that is flexible, scalable to support growth, while retaining the core underpinning of high quality delivery with a customer centric focus and value proposition.

The bread and butter of the Rolta AdvizeX's managed services solution were custom developed solutions of system monitoring & alerting, and an incident/ticket service desk management tool called INSIGHT SD. These two are tightly integrated, with the monitoring system feeding alerts into INSIGHT SD to manage as incidents and tickets. This includes ticket redirection to the internal resources, targeted documentation and knowledge management, escalation. INSIGHT SD also provided the customer portal view into the service being delivered.

As this part of the business grew and expanded, there was a growing need for:

- Enhanced Availability and Scaling to meet the needs of the solution with growth.
- Integrating the internal solution with client incident management systems.

Internal Collaboration Suite

One of the foremost areas in this regard would be to provide for internal team members a well-rounded collaboration and knowledge sharing system. This would apply to the technologists and sales executives, as well as the support organization.

Time Entry Tracking & Management

Another critical area is Time Tracking, being able to track time usage, allocation by client-facing projects, as well as internal projects. This gives the organization a deeper understanding of project status and being able to handle issues pro-actively versus reactively.

Back Office Financial Systems

Back office financial management systems are a critical part of the success and survival of any business. This would include understanding project performance (profitability & cost overruns), organizational performance (cost, revenue, overhead management, cash flow and profitability). Invoice generation and tracking is the backbone to revenue, which directly ties into Time Entry and tracking.

Developing a Cloud Strategy

Each business unit has its own specific products and services and therefore skill set requirements for the team members and consultants. However, as a technology and a service integrator, all our business units have something common at the core of who we are. Our business and organizational success is measured by customer satisfaction, which is highly dependent on our most valuable resource – our employees. Therefore, our strategy targeted the areas of Customer Management / Project Management and AdvizeX people resource management.

The cloud paradigm changes the nature and type of solutions applicable and available. Is there a better way that can improve our managed services to make us faster, more reliable and more accurate and offer better integration for our clients own internal incident management?

The key components of a cloud strategy are:

1. In what order do we address the focal points identified?
2. In broad strokes, define how we should address each of these focal points individually, while maintaining a coherent overall implementation.

From a team collaboration perspective, we needed a solution that would scale easily while supporting a globally, distributed work force. It was decided that moving the **email, document sharing and knowledge management systems to the cloud** would be appropriate and valuable.

In a professional services business, the time entry system is the single largest input into the financials system as well a project management. As a result, moving the time entry and tracking capability system to the cloud was an obvious choice. **As a result, the decision was made that we should move the accounting and project tracking functionality a well to the cloud.**

There are multiple aspects that go into developing and delivering a successful managed service offering. While moving all aspects to the cloud was not feasible or viable. Rolta AdvizeX therefore, decided to narrow the scope down to the specific subset of functionality where the most customer interaction occurs. **Therefore, Rolta AdvizeX decided to move the customer portal, incident and support request management and review functionality to the cloud**.

The next logical step to develop a comprehensive cloud strategy is to define the order and priority of the identified tasks/ functionality etc. The overall strategy broke down into the following implementation phases:

Phase I : **Back Office to the clou - Part 1**
- o Move email and collaboration suite to the cloud.

Phase II : **Back Office to the cloud - Part - II**
- o Move time entry, project management and accounting to the cloud
- o An additional sub task is to integrate the existing time entry system into the accounting system

Phase III : **Implement Cloud FusionX**
- o Move the Cloud Managed Services Portal to the cloud.

Phases I and II could have been executed in parallel for the most part due to the very loose integration and dependency between them. From a project timeline perspective, Phases I and II were larger projects, with a longer time line associated with them.

Rolta AdvizeX made a strategic decision to separate the phases as we did so that we could ease ourselves into the cloud journey, with small steps initially and going bolder as we get further down the road. Another key point is that Phases I and II provided the necessary foundation upon which to build and deploy Phase III.

Option Evaluation and Selection

This section talks about the identifying the potential options, evaluating them and making the final selection for each of the area above. While it is stating the obvious, understanding the requirements and being able to translate those into evaluation criteria is key. A wrong choice made at this juncture will have a snowball effect down the road.

Internal Collaboration Suite

The options for the internal communication and collaboration functionality was down to 2 possibilities: Google Suite and Office 365 Suite. These two options were to largest, commercial sized de -facto industry standard options that exist.

Both the Google Suite and Office 365 suite were rich and complete in offering by themselves. **However, we elected to go with MS Office 365 offering for the following reasons**:

- Office 365 proved to be the least disruptive option, since Rolta AdvizeX used this platform in the past.
- SharePoint provided the overall document management and content management capabilities.
- One Drive provided personal document managed and sharing capabilities.
- The solution eliminated the need for Rolta AdvizeX to manage product licensing and managing product distribution and upgrades.

Time Entry and Financial Suite

Rolta AdvizeX had been using a mix of various products, of differing age, maturity and vendors. These products were not tightly integrated, wherein lied the problem. Broadly speaking, the evaluation criteria applied were:

- It must be a cost-effective solution.

- It should be a flexible solution, fast to deploy allowing for incremental enhancements as we went through the conversion.
- It must be able to support a geographically distributed work force, i.e., mobile access, accessible from the internet.
- The solution should integrate and support all the inter-related processes start with time entry / project management, invoicing and billing as well as the remaining financial functionality needed by an organization.

From an evaluation perspective, the two top contenders were Oracle EBS and NetSuite / OpenAir. While Oracle EBS did have all these capabilities and a lot more, it did not necessarily have a SaaS-based solution that was at a high maturity level at that point in time.

NetSuite, which was acquired by Oracle a year ago, was a 100% SaaS-based solution that met all these criteria. The NetSuite solution included OpenAir for time entry management and NetSuite for the financial aspects of involving/billing etc. These two modules were independent of each other but tightly integrated with each other at the same time. In other words, the entire organization would use OpenAir for time entry, and only the finance / accounts team would need NetSuite access.

Cloud Managed Services Portal

As we said earlier, the Cloud Managed Services portal fundamentally delivered on two aspects critical to the client –transparency and integration. The goal that drives the evaluation and selection criteria here was how can we do it on a larger scale and do it better.

From an options perspective, the process starts with deciding between:

- Enhancing our custom-built solution to be deployed on the IaaS cloud, versus
- Moving to a cloud-based SaaS solution that could help us do the same.

Enhancing the custom solution would require building a team that would modify and port INSIGHT SD to be deployed on a IaaS platform, develop and evolve the project with further enhancements and capabilities such as building custom integration hooks into tools deployed within the client environment and client tools and finally manage and maintain the cloud solution on an ongoing basis for availability and performance. These are in addition to customizations and enhancements to our process.

On the other hand, if we moved to a SaaS-based cloud solution, we would move the activities of management, administration and product enhancement to the SaaS provider. Our team could then focus on our area of expertise, delivering high quality services.

The key was to pick a SaaS provider with a good market share, preexisting integration into hooks into most of the products/technologies in use across the industry. At the same time, the SaaS provider application must be able to meet the technical & functional requirements INSIGHT SD delivered at a low cost.

Rolta AdvizeX looked at the top tier SaaS-based incident and ticket management applications available including ServiceNow, Remedy & Heat. **ServiceNow clearly came out as the leader** in terms of being able to mimic and replace INSIGHT SD. ServiceNow proved to be:

- Clearly emerging as an industry leader and standard.
- Easy to customize to carry forward the process, policy and methodology provided by INSIGHT SD.
- Able to provide strong basis for integration into ITSM methodology.
- Able to integrate with a wide set of third-party applications.

- Easily configurable to build/deploy customer portals and dashboards.

Implementation

Through this process, we came to understand the business need, developed a strategy that involved moving to the cloud, evaluated our options, and selected the product/solution. Then came the interesting part of implementation – this is where rubber meets the road. As with any implementation, there are specific nuances and subtleties that had to be dealt with. These included a mix of modifying business processes, developing customization for integration with other systems in nature. In this section, we will dive into the implementation aspects for the final cloud solutions.

Office 365

The Office 365 implementation itself was nothing unique or one requiring a lot of customization. The front-end planning was critical in determining the layout of Office 365, but at the end of the day we were moving from an in-house Exchange/SharePoint-based system to MS Office 365 suite. The planning really came down to:

- Identify features and functionality of Office 365 which we would use
- Addressing the change in licensing paradigm
- Defining and designing the security aspect of the solution, including the AD integration and management
- Designing and developing the migration of a high volume of data from our on-premises systems (Exchange / SharePoint) to the MS Office 365-based solution

NetSuite

The implementation of OpenAir was basically a reimplementation of the financials in a newer modern tool, and changing our time and project management processes as much as possible to fit into OpenAir standard methodology and flow. Contrary to what one would believe, this was a significant undertaking, requiring a lot of planning and effort towards:

- Migration and conversion of data from multiple sources into OpenAir
- Customizing the configurations from an accounting perspective
- Configuring the rules engine within NetSuite to match the AdvizeX business rules

When it came to integrating time entry with the nuances of our Managed Services practice, there was a great deal to consider. We needed to ensure that our staff could continue to perform all their data entry tasks (including time entry in the primary ITSM tool), and still be able push all time-entry data to OpenAir for tracking and management, and from there to our invoicing system (NetSuite). Due to the very complex and flexible set of invoicing practices we must support for our client base, this custom integration was very challenging. We needed to ensure that all relevant foundation data was built into OpenAir (project codes, charge code definitions to billing rules). We had to build a time entry data transfer mechanism between INSIGHT SD and OpenAir for complete and seamless integration between the two systems. This customization had to be precise, repeatable, auditable and reusable.

ServiceNow

While ServiceNow delivered on a lot of the basic functionality of incident and ticket management, change management etc., the switch over had to consider the non-standard custom processes and aspects specific to our business and efficiency. All through the implementation, we remained focused

on porting over the essential and unique functionality within INSIGHT SD, while at the same time converting over to ServiceNow processes wherever possible.

This customization effort could be broken down to 3 major areas that required additional development and customization to deploy. Each of these needed careful design and planning to ensure the customizations maintained the existing functionality while at the same time can grow and evolve in tandem with ServiceNow as a platform.

- Custom / client-specific connection instruction and credential management while maintaining the same security level or better than what INSIGHT SD provided.
- Ensure the integration between ServiceNow and OpenAir for time and project tracking to develop invoices.
- Develop the integration to capture monitoring events and alerts coming from our custom tools as well as client tools.

We moved all the time, project, and invoice management functionality over to OpenAir / NetSuite. Because of the move to ServiceNow, we had to provide the same functionality of time and project information into OpenAir that we built into INSIGHT SD. We had to ensure ServiceNow understood and integrated with the core foundation data from OpenAir, including project and charge code definitions, billing rules, security etc. We had to ensure that time entry data entered from ServiceNow, OpenAir or our legacy ITSM system all flowed seamlessly between all three systems for reporting and time entry purposes. All of this was accomplished by building sophisticated algorithms leveraging ServiceNow's webservices features, business rules, scheduled jobs and script includes. We then built forms to provide users with easy time entry capabilities from incidents or directly into their timesheets.

The integration with client custom monitoring tools was another example that was critical and custom. We had to integrate ServiceNow to be able to take input from dozens of client custom monitoring tools to create and manage incidents. The planning and design had to consider the high volume of event traffic data we manage and the ability to be able to process this traffic well within the clients SLA's we had to meet. The solution had to be lightweight, highly performant, scalable and flexible. We accomplished this by building back-end processes and tools to monitor inbound mailboxes for client events and create incidents in ServiceNow using web services.

The biggest shift in this case was not really the move from on-premises to the cloud. It was the shift away from custom-built code under our control to a vendor-provided, developed and managed SaaS model. Internally, we had to shift from planning around a custom-built system adapted to our process and under our control to the ServiceNow platform, where building some components required changes to our processes, as the platform cannot easily accommodate our custom processes.

What's Next in Our Cloud Journey

Rolta AdvizeX's Cloud Journey has been a 3+ year journey which started small; flash forward to now, where we have made a significant investment in terms of cloud adoption. This does not mean that the journey is complete by any means. We are currently in a state of fine tuning and stabilizing what we have implemented so far. We fully expect to adopt other cloud initiatives and technologies, but will let the organizational and business requirements drive the direction. One thing is for sure: whenever the organization strategy has new or modified IT needs, we will actively consider cloud options for best fit during the evaluation.

To be clear, what cloud adoption means to any given organization and how the organization goes about adopting will be unique and specific to that organization. The obvious reason for that being that cloud

adoption must be driven by organizational goals, strategy and requirements. What we can say from experience (both our experience and the experience of the customers we have helped), is that done right, cloud-based services can absolutely be rewarding and beneficial.