

Fujitsu Global Legacy Modernization Modernization to Cloud Services



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Fujitsu is a leading provider of customer-focused information technology solutions and Cloud Services for the global marketplace. Fujitsu's Global Legacy Modernization Services enable organizations to leverage the years of investment they have made in their application assets, deliver more from IT budgets and reduce the risk of implementing new technologies. Fujitsu's capabilities include allowing clients to leverage Cloud Services by either migrating or modernizing existing legacy systems.

Fujitsu's Global Legacy Modernization offering is based on a standard set of eight modernization capabilities which are available to our clients throughout the world.

The Challenge

Organizations are gaining significant competitive advantage by utilizing Cloud Services for suitable systems in their IT portfolio. By leveraging Cloud Services these organizations are reducing the need for large on premise data centres and vast stables of servers which may be sitting idle for most of the time. The numerous benefits of the Cloud Services model has allowed these organizations to build a technology gap which their competitors would be hard pressed to leap without embracing Cloud Services themselves.

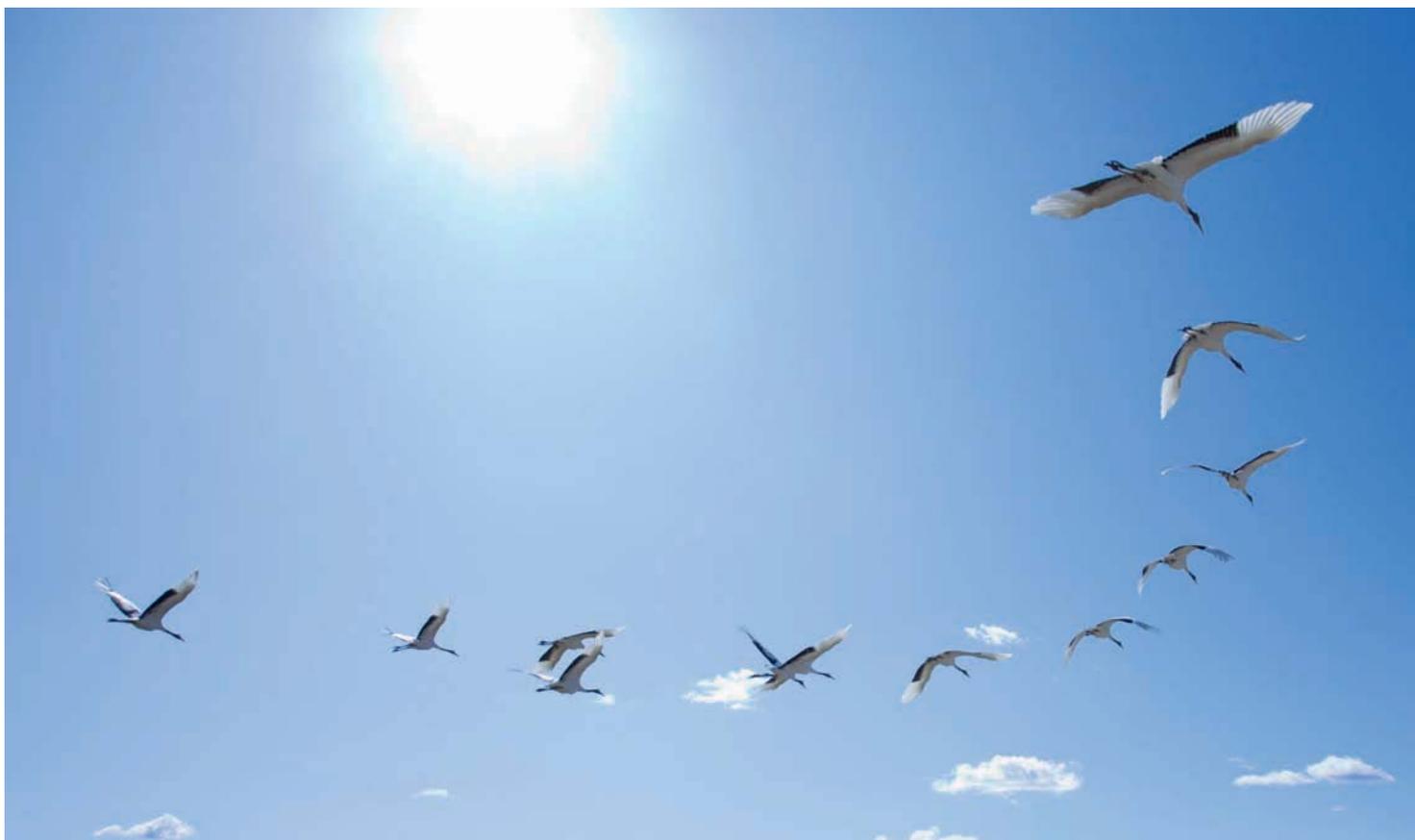
However, there is a problem. Many applications which have functionality that would be ideal for Cloud Service utilization have underlying technology issues which have meant that placing them on such a Cloud Service would not currently be a viable option. This situation in turn leads to the further widening of the gap as the organizations without Cloud Services are still required to spend so much of their IT budget buying and maintaining their infrastructure fleet.

What is required is a method that allows clients to firstly identify applications that would benefit from, at least some interaction with Cloud Services, and then a method of either converting those applications on to suitable architecture and technology so that they can be migrated to the cloud, or alternatively modernize the applications so that Cloud Services can be leveraged even when aspects of the applications remain on premise.

What are the main issues preventing applications migrating to Cloud Services?

Many applications that would be considered a good fit to be hosted on Cloud Services, because of the functionality they provide, have one or several of the following issues that prevent them from being easily moved on Cloud Services.

- **The application is not stateless**, in other words the front end and the back end of the application needs to be directly linked throughout a transaction. This structure was designed for pre web applications. However for an application to be on the cloud it must be stateless, as is the case with a web application. The architecture of Stateful applications would need to be changed to Stateless prior to considering a move to Cloud Services.



Fujitsu's Global Legacy Modernization offering teams also have skills and knowledge in country and regional capabilities. Please see the local Websites for more specific information.

Fujitsu's Global Legacy Modernization offering is run from seventeen teams which are situated in seven regions around the world. The offer can be accessed from any country in which Fujitsu has a local presence.

- **Unstable Applications.** Applications that are not yet stable, for instance they keep failing, are not normally good candidates for a move to Cloud Services. It might be more advisable to focus on stabilization prior to a move to Cloud Services.
- **High utilization of non-cloud compliant components.** Often legacy applications use technical components and utilities that were not designed to run in a Cloud Services environment, this could be anything from a licensing structure that does not work with the concepts of Cloud Services to technological issues. If these components can't be replaced or at least integrated to Cloud Services then moving the application will be very problematic or even impossible.
- **Data Security and Data Sovereignty.** Depending on the data storage requirements, there may be issues about storing data off site or even in another country, making the total migration of an application to Cloud Services difficult to attain.
- **Scalability.** To truly gain the maximum benefits from moving an application to Cloud Services, that application needs to be designed so that it can scale both up and down so that it can be used on many servers at the same time without causing data and locking issues.
- **Base Technology.** Some legacy applications were created a long time ago on languages that are either already dead or in some cases are not suitable for Cloud Service deployment. Also some legacy applications are still running in versions of technology which are many versions behind the current supported one. Running such applications at all comes with obvious inherent risks even in an on premise environment. But it may well be that Cloud Services providers will not be able to handle such technology. Also Cloud Service providers do not offer all the platforms that are currently on premise. If an organization's applications are on platform specific technology then it is possible there is no Cloud Service option.
- **Finally, applications that are heavily integrated with other applications,** that the organization is not considering moving to Cloud Services, are likely to be difficult to deploy to Cloud Services due to their interdependencies.

Unique Proposition

Fujitsu is a global market leader in Cloud Services, the Legacy Modernization capabilities add to the wide array of other offerings available to our clients so that they can gain the greatest benefit from Cloud Services.

The majority of applications were built many years before Cloud Services came to the market. With our capabilities it has become easier for clients to migrate or modernize applications for Cloud Services. This is a global capability which is available to any Fujitsu client with such issues.



Why Fujitsu?

Modernization or Migration

Fujitsu's Legacy Modernization offering is based on eight capabilities that our specialist teams can deliver via 17 centers around the world. One of these capabilities is called Legacy Modernization for Cloud Services. The role of this capability is to allow organizations the ability to gain at least some benefit from Cloud Services for their legacy applications.

The Legacy Modernization for Cloud Services can be split into three individual but interrelated parts:

1. Application Value Assessments

An investigation into an organizations portfolio of applications. This assessment looks at the road map, both at the portfolio and application level, with the view to finding the best possible alternatives for the organization. These options include ascertaining whether legacy modernization and Cloud Services are viable amongst the other alternatives such as retaining the status quo, replacement by a package and decommissioning.

2. Legacy Migration

Should an application be identified as a candidate for Cloud Services but has some of the issues mentioned above, the organization may wish Fujitsu to undertake a full migration of the application to suitable architecture, technology and data storage so that the application can be deployed in its entirety to Cloud Services.

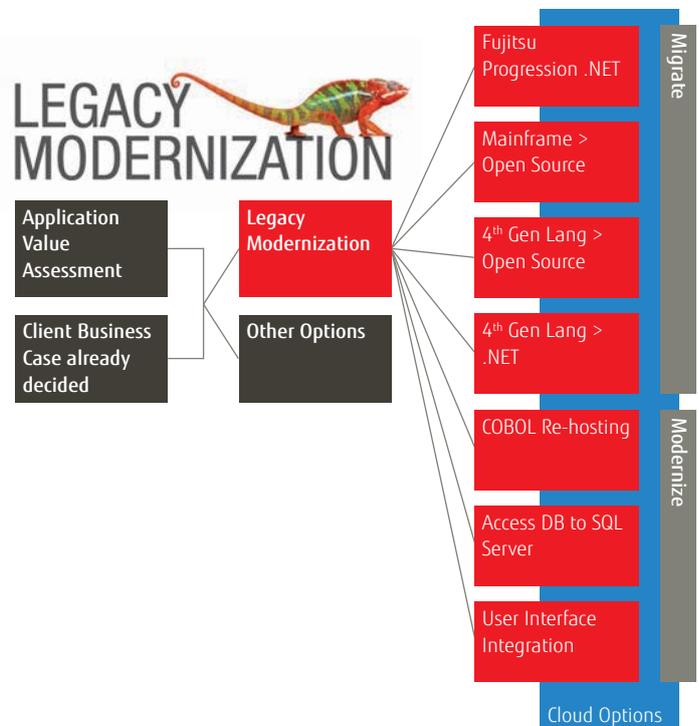
3. Legacy Modernization

Should some aspects of an application, such as the front-end or data storage be identified as suitable candidates for Cloud Services, then Fujitsu has capabilities to place just those parts of the application on the cloud whilst the rest of the application remains on premise.

Value Add Offerings from Fujitsu

Although not part of the Global Legacy Modernization Offering, Fujitsu have other related offerings which can be of value to clients considering this course of action. Some of these offerings are listed below:

Fujitsu Standard Legacy Modernization Roadmap



Value Added Offerings

- Fujitsu Cloud Services (International and Domestic)
- Fujitsu Data Centre Services
- Fujitsu Application Managed Services – this is where Fujitsu takes over the development and maintenance of your applications
- Fujitsu Consulting Services – this is where Fujitsu consultants assist the client with the strategic IT direction of the organization
- Fujitsu Managed Services – Managing your entire IT services
- Fujitsu Infrastructure Services – Fujitsu and Third Party Infrastructure Supply
- Fujitsu Sustainability Services – Green IT Considerations and Actions
- Fujitsu Enterprise Services – ERP deployment, configuration and management

Capability Overview

Fujitsu Global Legacy Modernization for Cloud Services is considered a capability in its own right. It encompasses the Cloud Services aspects of the other 7 capabilities

Capability	Description
Application Value Assessment	A consulting capability that examines the organizations current application portfolio with the view to identifying the most suitable and feasible options to ensure that the client can gain from the investment already made in the applications well into the future. Cloud Services and whether an application is already suitable for deployment or not is an option that is investigated in this assessment. The Assessment also investigates whether it is most suitable to deploy the whole application or just part of the application to gain the greatest benefit for the client.
Fujitsu Progression	This 100% Fujitsu owned capability allows us to migrate mainframe and midrange systems into .Net based systems that can be run on premise or in Cloud Services. As a migration option, Fujitsu can change the architecture and technology so that the issues mentioned above are mitigated and the resulting migrated application can be deployed in its entirety into Cloud Services such as the Fujitsu Cloud or Microsoft Azure.
Mainframe to Open Source	This capability is run in conjunction with our partners FreeSoft and Ateras. It allows Fujitsu to migrate mainframe systems into Open Source based systems that can be run on premise or in cloud services. As a migration option, Fujitsu can change the architecture and technology so that the issues mentioned above are mitigated and the resulting migrated application can be deployed in its entirety into Cloud Services such as the Fujitsu Cloud or Microsoft Azure.
Client/Server and 4th Generation Language Migration	This capability is run in conjunction with our partners Unify and Metex as well and utilizing Fujitsu's own IP "CoolCat". It allows Fujitsu to migrate 4th generation languages such as Oracle Forms, Lotus Notes, PowerBuilder, Visual Basic Classic, Centura and Delphi to either Java or .NET that can be run on premise or in Cloud Services. As a migration option, Fujitsu can change the architecture and technology so that the issues mentioned above are mitigated and the resulting migrated application can be deployed in its entirety into Cloud Services such as the Fujitsu Cloud or Microsoft Azure.
Access DB and SQL Server to Azure	This is a highly automated capability to move Access Databases and logic or SQL Server Databases and logic so that they reside on SQL Azure. The capability will also ensure the connections in the applications linking to the new data store. This unique toolset is supplied by our partner ConvertU2 and is of great use in gaining benefit from moving Databases to Cloud Services.
User Interface Integration and SOA Integration	This capability is run in conjunction with our partners Rocket Software. This capability allows for the legacy applications to stay as they are but utilize Cloud Services for either SOA or User Interface Integration. Fujitsu builds front ends which can incorporate new functionality, new workflow, new validation, Web Services for further integration and Mash-ups (where several applications from various systems look as if they are just one application). This allows Cloud Services to handle peaks and troughs in usage whilst giving clients excellent new "look and feel" to the applications and opening legacy systems to more efficient integration.
COBOL to NetCOBOL Migration	This capability is run in conjunction with our partner GT Software Solutions. This capability allows for legacy applications that are currently written in a variant of COBOL to be migrated to the Microsoft Windows platform whilst keeping the source in COBOL. NetCOBOL is a fully managed .Net language that can be developed and maintained from the Visual Studio development environment. By utilising this capability clients can be sure that the current COBOL technical resources, who often have a great deal of undocumented knowledge about the legacy applications, can keep working on the applications whilst the organization takes full advantage of the application residing on a Windows Server based platform.

Please Tell Me More

Fujitsu would be pleased to talk to you further about how we can work together to help you leverage the investments your organization has made in legacy applications.

If you would like to talk to us in person please send an email to the Legacy Modernization global team at the addresses provided overpage.

About Fujitsu

Fujitsu is a leading provider of ICT-based business solutions for the global marketplace. With approximately 173,000 employees supporting customers in 70 countries, Fujitsu combines a worldwide corps of systems and services experts with highly reliable computing and communications products and advanced microelectronics to deliver added value to customers. Headquartered in Tokyo, Fujitsu Limited (TSE:6702) reported consolidated revenues of 4.6 trillion yen (US\$50 billion) for the fiscal year ended March 31, 2010. For more information, please see www.fujitsu.com.

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