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Modernization to Cloud Services

shaping tomorrow with you

FUJITSU Application Modernization

Modernization to Cloud Services

Fujitsu is a leading provider of customer-focused information technology solutions and Cloud Services for the global marketplace. Fujitsu's Global Application 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 Application Modernization Offering is based on a standard set of ten 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 for 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 Application Modernization Offering teams also have skills and knowledge in country and regional capabilities. Please see the local Websites for more specific information
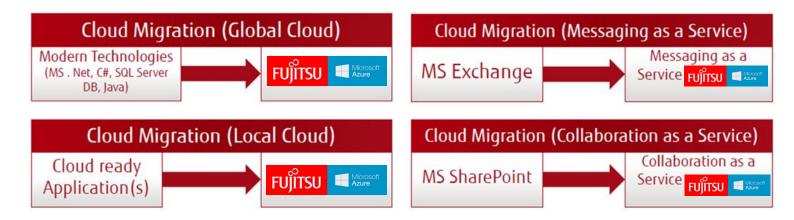
Fujitsu's Global Application Modernization Offering is run from seventeen teams which are situated in all regions around the world. The offer can be accessed from any country in which Fujitsu has a local presence.

■ 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 Application 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.

Cloud Migration (Global Cloud)	
Modern Technologies (MS . Net, C#, SQL Server DB, Java)	→ FUJITSU / Microsoft Azure

Cloud Migration (Messaging as a Service)	
MS Exchange	→ Messaging as a Service FUJITSU / Microsoft Azure

Cloud Migration (Local Cloud)	
Cloud ready Application(s)	→ FUJITSU / Microsoft Azure

Cloud Migration (Collaboration as a Service)	
MS SharePoint	→ Collaboration as a Service FUJITSU / Microsoft Azure

Modernization or Migration

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

The Application Modernization for Cloud Services can be split into four 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 modernization and Cloud Services are viable amongst the other alternatives such as retaining the status quo, replacement by a package and decommissioning.

2. Application Readiness Assessment

An investigation at the application level of either current Java and .NET systems or undertaken on applications that we have migrated to Java or .Net in preparation for cloud deployment. The assessment looks at issues that will either block or detract from the applications abilities to fully utilize the cloud. We then act on this report to ensure cloud readiness.

3. Application Migration

Should an application be identified as a candidate for Cloud Services but have 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.

4. Application 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.
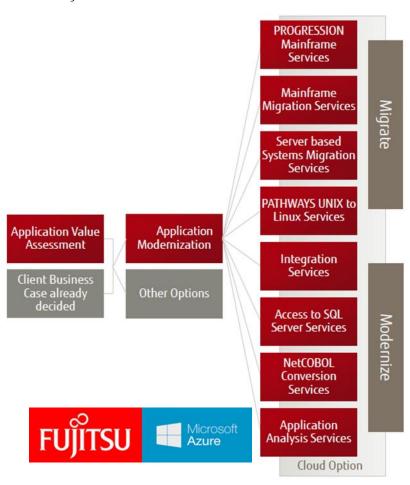
Value Add Offerings from Fujitsu

Although not part of the Global Application 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 Modernization Roadmap

Value Added Offerings

■ Fujitsu Cloud Services/ Microsoft Azure (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

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

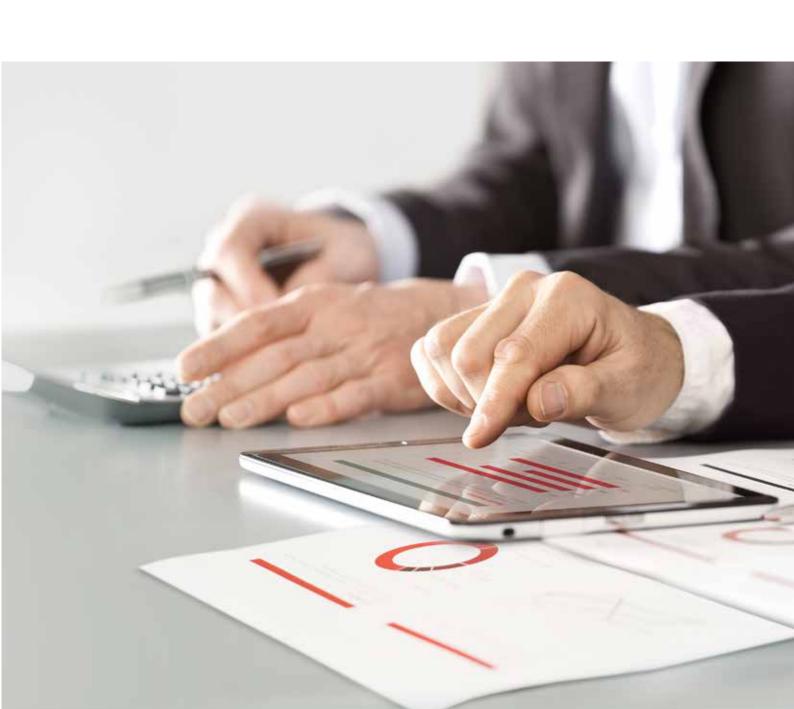| Capability	Description
Application Value Assessment	A consulting capability that examines the organizations current application portfolio with the view to identifying the most suitable and feasible options to ensure that the client can gain from the investment already made in the applications well 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.
Progression Mainframe Services	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 Migration Services	This capability is run in conjunction with our partners FreeSoft, and MSS International. 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.
Server Based Systems Migration Services	This capability is run in conjunction with our partners 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 to SQL Server Services	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 Global and is of great use in gaining benefit from moving Databases to Cloud Services such as the Fujitsu Cloud or Microsoft Azure.
Integration Services	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.
NetCOBOL Conversion Services	This capability is run in conjunction with our partner GT Software. 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 platforms and to Cloud Services such as the Fujitsu Cloud or Microsoft Azure.
Pathways Unix to Linux Services	Fujitsu's capability around Pathways is undertaken in conjunction with our Partners Red Hat and Symantec. The aim of this capability is to move a client's systems from UNIX based operating systems (most often Solaris) and place them on a RHEL (Red hat Enterprise Linux). The end result is that clients systems are no longer subject to the risks, issues and costs of staying on the UNIX platforms.

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 over page.

Fujitsu's
Value Propositions

Efficiency, Quality and Risk Reduction
Fujitsu provides to its clients the most efficient and proven roadmap to seamlessly modernize their aging technology to a modern platform that enables innovation whilst keeping the risk profile as low as feasible.

Global standard IP and Best of Breed Partnerships
To position organizations for future growth, new business strategy, reduced operating cost, and elimination of talent scarcity Fujitsu offers a complete global portfolio of modernization services, toolsets and a best of breed partner network with a successful track record and agile modernization methodology.

Application Migration Services
Migration involves moving an application, to a different environment. As a key stage in the migration project, Fujitsu undertakes a technical proof of concept. This involves migration of a representative sample of the application code using the selected conversion tools and proving feasibility before moving forward.

Heritage
Fujitsu ICT heritage of helping clients to meet their IT and business challenges gives Fujitsu a unique and flexible perspective on what solutions actually work when devising a system modernization strategy.

Not just a "modernize and leave" offering
Fujitsu aims to partner with our clients on a modernization journey and establish a long term relationship to assure success and continuity. Fujitsu is not just a modernization company and therefore we can bring much more to the table to help our clients before, during and after a modernization project.

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 production applications.
If you would like to talk to us in person please send an email to the Modernization team in your local area. Email addresses are on the final page of this brochure.
Or visit our website and take an online survey.

About Fujitsu

Fujitsu is the leading Japanese information and communication technology (ICT) company offering a full range of technology products, solutions and services. Approximately 170,000 Fujitsu people support customers in more than 100 countries. We use our experience and the power of ICT to shape the future of society with our customers. Fujitsu Limited (TSE: 6702) reported consolidated revenues of 4.4 trillion yen (US$47 billion) for the fiscal year ended March 31 2013. For more information, please see http://www.fujitsu.com.

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