

Go Digital by Taking Advantage of Hybrid Cloud Patterns

with IBM Operational Decision Manager and IBM Business Process Manager

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 Cloud

WebSphere

Introduction

In general, there is agreement and overall understanding of the *systems of record* (SOR) and *systems of engagement* (SOE) view of enterprise architecture. *Systems of insight* (SOI) are new and represent a new element in enterprise architectures, capable of providing real-time situation detection and the ability to take timely actions. For details, see Figure 1.



Figure 1 New world of systems

IBM® Business Process Manager (BPM) and IBM Operational Decision Management (ODM) both play roles as SOR and are often involved in SOE situations as well. The IBM Bluemix™ Workflow service and the IBM Bluemix Rules service also can play in the space of SOE when the cloud scenarios are considered. IBM Operational Decision Manager Advanced and the new insights capabilities contained in this offering are placed squarely in the Systems of Insight (Figure 1).

In the blog post *Two Speed Integration By IBM*¹, IBM Fellow Jerry Cuomo and team say that the SOR represents *Steady Speed* and the SOE represents *Fast Speed*. This IBM Redbooks® Redguide™ publication builds on this SOR and SOE premise and describes a hybrid cloud that offers a number of ways to derive business value by leveraging new engagement models and new *born-on-the-cloud* capabilities.

Hybrid pattern 1: A new channel opened

Figure 2 shows a high-level view of hybrid cloud pattern 1.

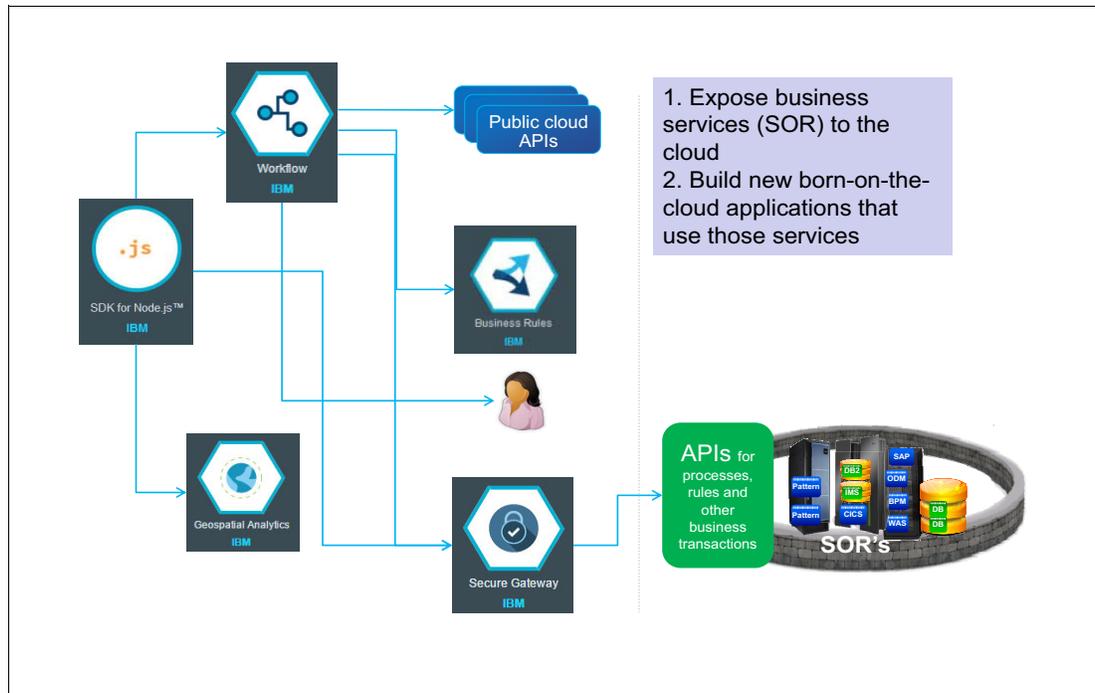


Figure 2 Hybrid pattern 1

The hybrid pattern 1 (shown in Figure 2) shows a new application built in the cloud and born-on-the-cloud that provides access to assets that exist in the SOR. This is a hybrid pattern because the SOE is running in a cloud, such as IBM Bluemix, in one form or another. The SOR can run in the cloud also, such as on IBM Business Process Manager on Cloud, IBM PureApplication® System, IBM PureApplication Service on IBM SoftLayer®, or possibly the on newest option IBM PureApplication Software.

¹ https://www.ibm.com/developerworks/community/blogs/gcuomo/entry/two_speed_integration_by_ibm?lang=en

A specific example of this approach is shown by the sample application, JK Auto Lending² (Figure 3).

JK AUTO LENDING
We get you moving fast

Enter your details below and click submit to see if you are pre-approved for an auto loan

Customer Id:

First Name:

Last Name:

Loan Amount :

Vehicle Type:

Loan Duration (months):

Yearly Income:

Figure 3 Auto lending application window

² <http://auto1oandemo.mybluemix.net/autoLoanForm>

This application is built as a new SOE using Bluemix services and uses an existing process running in IBM Business Process Management in the SOR. The overall architecture of the application is shown in Figure 4.

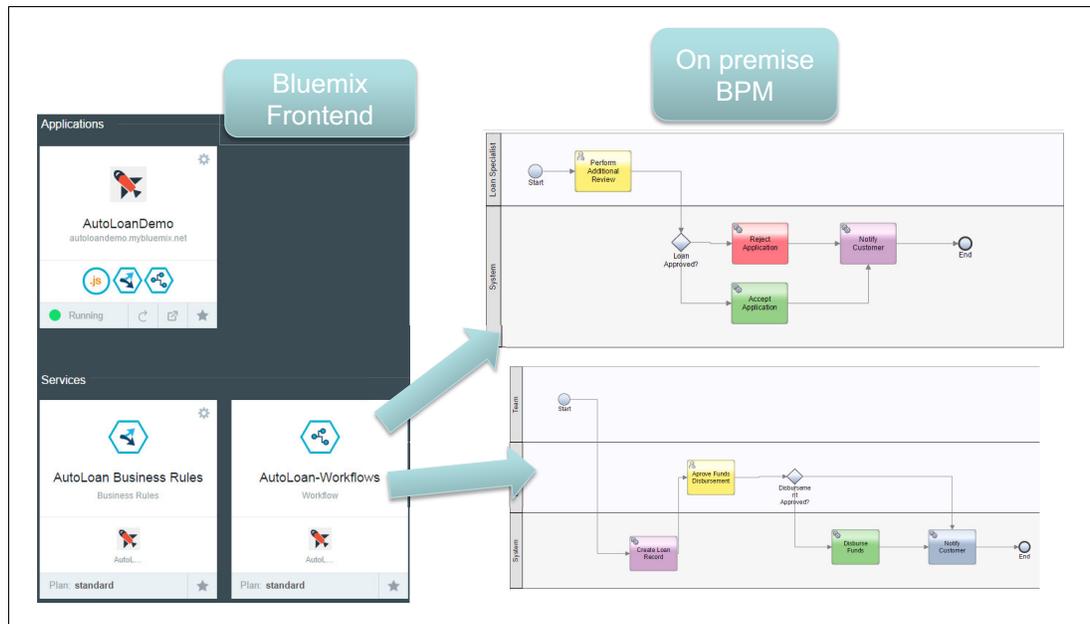


Figure 4 Build new born-on-the-cloud applications

Figure 4 shows pre-qualification for a new auto loan using Bluemix services. The application includes a node.js³ front end that is supported by Bluemix Workflow services and Bluemix Rules services. The workflow assists in orchestrating and managing the interaction. For example, at the end of the engagement, the end user is given an opportunity (assuming proper qualification) to accept a loan at a specific interest rate. The rules service has channel specific rules as a demonstration of using that service. Other services could be added. If the loan applicant decides to accept the loan, the SOR containing the IBM Business Process Manager process is invoked and the rest of the logical business process proceeds.

It is likely that little or no change will be needed by the existing business process. There might be a need to have an API that better matches what is needed by the SOE, but in this simple case, you have reused the process as is. The usage of the rule service by the SOE can be complemented or replaced by invocations to rule APIs that exist in the SOR. IBM intends to have IBM Business Process Manager integrate with IBM API Management and IBM Cloud Integration Services to provide this support.

Think beyond just a new channel for engagement that is done by a specific organization. If the SOR processes (and rules) were exposed as APIs, then it is possible for third parties to create these new SOEs. All of the capabilities of Bluemix are available and allow for rapid creation of these new applications that take advantage of the SORs.

³ Node.js <https://nodejs.org/>

Hybrid pattern 2: Enriching the SOR

Hybrid pattern 1 (the SOE driving the SOR pattern) is a good approach, but going the other direction can also be valuable for different business reasons. Figure 5 shows a high-level architecture for this pattern.

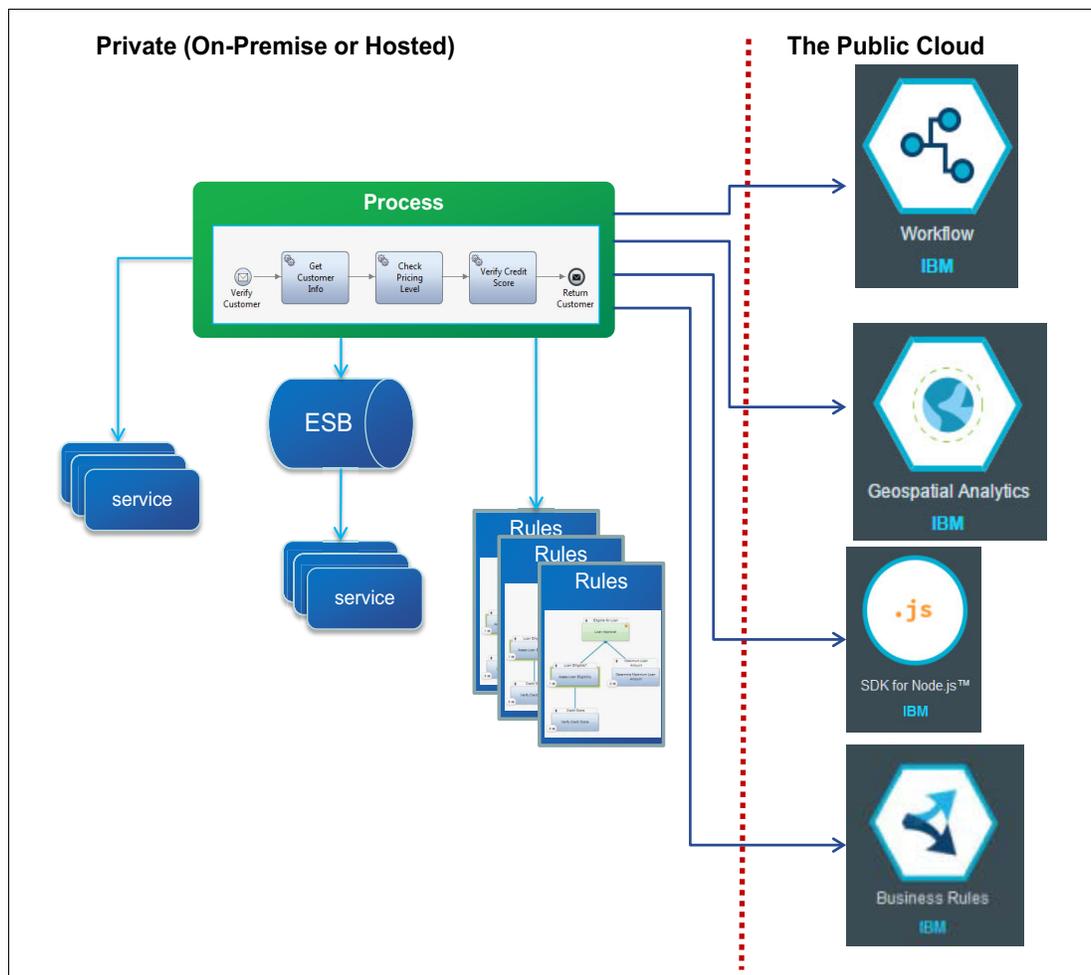


Figure 5 Hybrid pattern 2

With this pattern you see the SOR being extended with Bluemix services. You also see usage of the workflow service, rules service, and others. Any service can be used, so do not be constrained by the examples in Figure 5. Think about customer centricity, think about customer service, and think about accessing information that lives in the cloud helping to create that personalized experience.

Figure 6 shows an example application that follows this pattern.

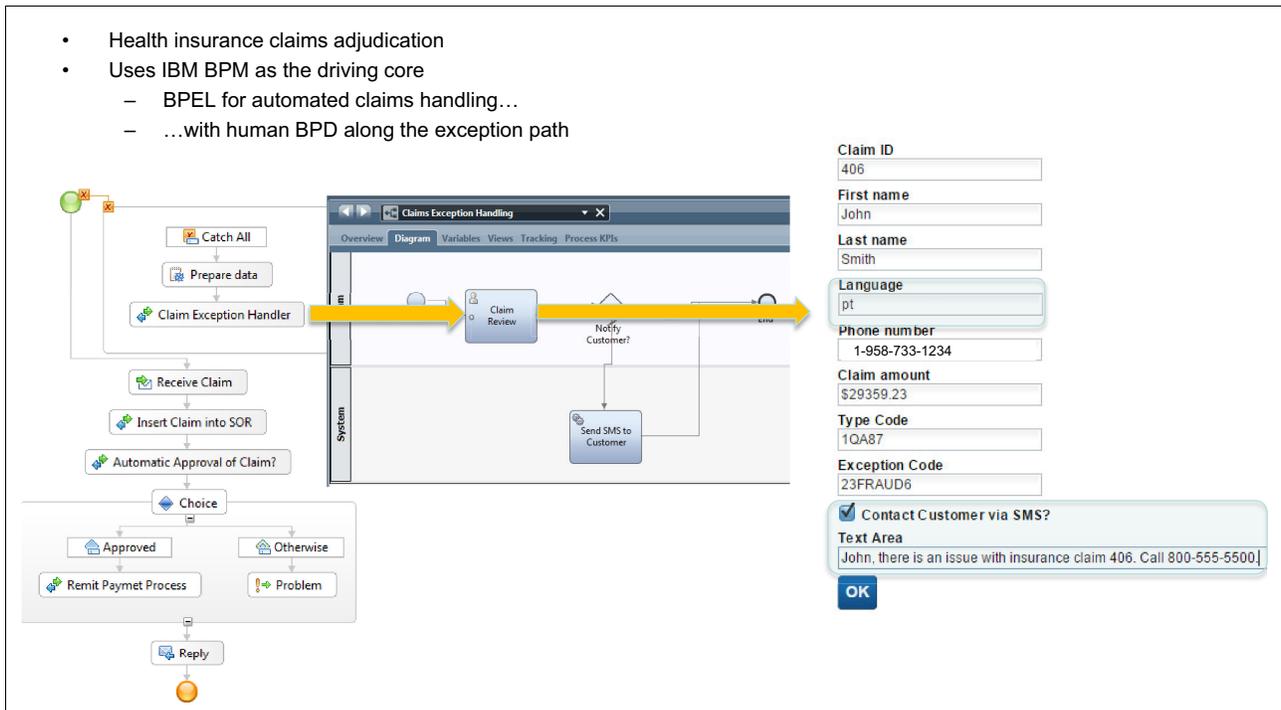


Figure 6 Claims Exception Notification

This example (Figure 6) uses a Business Process Execution Language (BPEL) process that does straight-through claims processing and kicks business exceptions out to a business process modeling notation (BPMN) human-centric flow. Up to this point things look like business as usual. However, that is about to change. The human centric flow is not just going to handle the exception by sending a snail mail. It is going to drive a direct Short Message Service (SMS) to the client, in the language preferred by that client, providing customized and immediate notification that a claim has been rejected.

The BPMN Business Process diagram (in Figure 7) drives a Bluemix program (via APIs) that take advantage of Bluemix services.

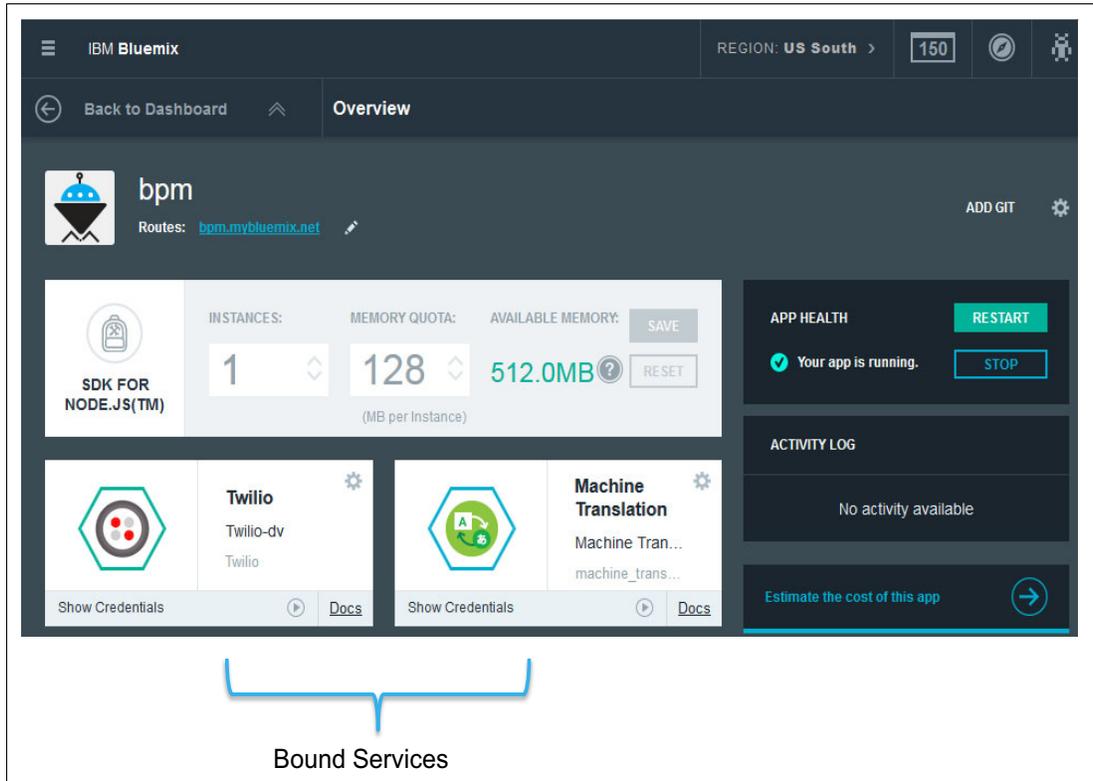


Figure 7 Create value with Bluemix Notification and Translation

In this case, Twilio⁴ and Machine Translation⁵ are used. The BPEL program was not modified at all. Thus, the core SOR remains stable while the extensions at the human-exception flow have been added. This approach is actually consistent with what happens when doing continuous process improvement.

Imagine all the other services in the cloud that can be used to provide more business value and more customer centric experiences. All that is needed are APIs to those services and ways to call them. Of course, calling services from BPMN flows is relatively easy and something IBM will potentially improve over time.

There are other patterns that are variations on this second approach. A pattern that pushes information out to the cloud from IBM BPM or IBM Business Monitor for analysis is another variation on hybrid pattern 2. Beyond extending the second pattern, it is then easy to consider having cloud-based platforms that are designed to notify in-flight SOR processes. This approach blends the first and the second patterns. Other more interesting combinations will also emerge as time goes by. In fact, when you begin looking at Systems of Insight that are in the cloud, these more advanced patterns come to the forefront.

⁴ Twilio.com <https://www.twilio.com/>

⁵ Machine Translation, <https://www.ibm.com/smarterplanet/us/en/ibmwatson/developercloud/machine-translation.html>

Conclusion

Blending the born-on-the-cloud services and capabilities with the SORs that are the essence of many large businesses in the ways described in the guide can add new value to the enterprise. New SOEs can drive back to exposed processes and rules, forming new channels. Existing SORs can be significantly enriched by mixing in born-on-the-cloud services, offering better information to process participants and faster time to process completion.

Other resources for more information

For further information, see the following sources:

- ▶ IBM Business Process Manager product web page:
<http://www.ibm.com/software/products/en/business-process-manager-family>
- ▶ IBM Operational Decision Management product web page:
<http://www.ibm.com/software/products/en/category/operational-decision-management>
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- ▶ IBM - Hybrid Cloud
<http://www.ibm.com/ibm/puresystems/us/en/hybrid-cloud/>

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