

# business integration

JOURNAL

## Enterprise Integrity: Resource Management

BY DAVID McGOVERAN



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# ENTERPRISE INTEGRITY

BY DAVID MCGOVERAN



## Resource Management

Management (BPM), orchestration, and the like. Among other benefits, resource independence enables business users to specify only the business objectives of process activities, delegating the allocation and scheduling of activity implementation resources to the run-time system, so as to manage and possibly optimize agility, efficiency, availability, and flexibility. A number of vendors wrote to me to make certain that I knew the “resource independence” capabilities of their particular products.

Some vendors provide run-time assignment of staffed activities to available, qualified personnel based on roles, and one even permits those roles to be parameterized. Some load balance automated activities across available Web Services. Some permit the manual assignment of a particular service implementation at process instance deployment or start-up. Many vendors support process abstraction and related means of hiding the activity complexity. While all these capabilities are beneficial and certainly decrease resource dependence, in my opinion, none of them provide resource independence.

In an effort to make it easier for consumers to evaluate the resource independence of a BPM, orchestration, or other type of product that purports to support business process execution, I’ve decided to provide a succinct guideline:

*A business process execution product may claim to support resource independence if and only if, for each and every activity that might be activated within a business process, a running instance of that business process continues uninterrupted without requiring human intervention when any specific resource necessary for that activity becomes unavailable at any time prior to activation, but an equally functional (from the perspective of business, not technological, specifications) resource is available.*

A couple of cautions are in order. First, resource independence is completely meaningless if the primary purpose of the specification of an activity within a business process is technological. This kind of specification is common in service orchestration products, especially if they generate an application from the process model, or if they are used for composite application development. Second, resource independence is meaningless if the required business functionality isn’t specified in terms of objectives, cleanly separated from technological or arbitrary resource allocation issues. For example, the specification shouldn’t distinguish between automated and manual

means if either could conceivably achieve the business objectives. Third, to achieve resource independence, the system must have a single, uniform approach to resource management, including capabilities specification, allocation, and scheduling. Resource independence can’t be achieved by a plethora of tricks and techniques requiring expert developers who know when and how to use them, whether as design or administration tasks.

In the role of business process designer, a user needs a consistent method to specify each activity’s business requirements. These requirements are just as much defining properties of an activity as its data inputs and outputs. For example, a manufacturing step may involve the assembly of physical materials meeting certain quality, timing, and cost conditions. In the production planning or some similar role, a user needs a consistent method to specify the capabilities of various resources, whether singly or in combination. The resource management subsystem must match activity requirements to resource capabilities while resolving conflicts in scheduling.

Workflow management systems typically use static resource allocation scheduling (a.k.a. staffing). A significant improvement uses a run-time technique known as pruning or forward scheduling: As branches in the process flow are eliminated, personnel resources may be freed for use downstream. By contrast, process automation systems typically use dynamic allocation and scheduling mechanisms similar to an operating system. Neither extreme is acceptable in a BPM product, which must be able to mix manual and automated activities.

Automating a business process without adequate facilities for maintaining availability in the face of resource deficiencies is risky. Most business processes are entangled with other business processes, whether through shared resources or explicit process dependencies. The failure of any business process instance will almost certainly contribute to the degradation of any entangled mission-critical processes, assuming the failure doesn’t cascade. Furthermore, most business processes are too complex for efficient manual resource allocation and scheduling without significant risk once partially automated.

The upshot is that resource independence is, ultimately, not an option but a requirement. To obtain the real benefits of a BPM product, and for the sake of the *integrity* of your mission-critical processes, evaluate its resource independence. After all, it’s your *enterprise* that’s at risk, not the vendor’s. **bij**

### About the Author

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