

APPLICATION DEVELOPMENT: CUSTOM OR BPM PLATFORM?

7 WAYS THAT PROCESS-BASED
APPLICATION DEVELOPMENT MAY
BE WHAT YOU NEED



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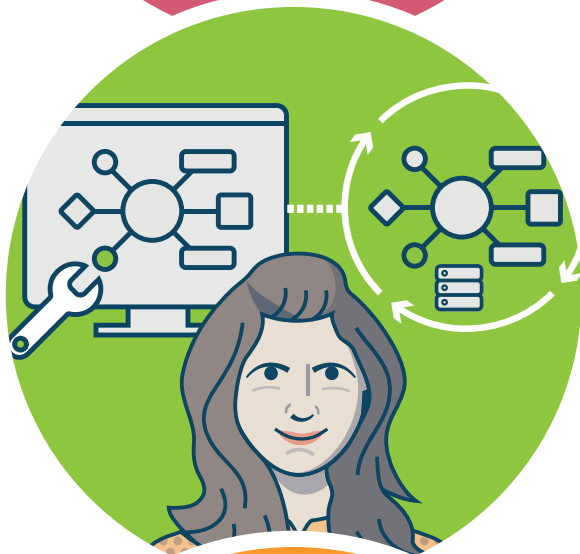
Introduction

When faced with the need for a new business application, software developers aim to create high-quality, value-adding applications with minimal effort.

Traditionally, the way to meet unique business requirements to maintain competitive advantage is to build the application from scratch, that is, in a custom development.

But there is another option that deserves a closer look: process-based application development on a BPM platform.

This e-book takes a look at where and how this option offers advantages over custom application development. We'll consider 7 criteria. You will see what is available in BPM process-based application platforms (also known as Business Process Management Suites or BPMS) and how these capabilities can be leveraged for creating customizable, adaptable, scalable, highperforming and user-friendly business applications.



What does it mean?

A custom-built application is an application for a specific organization / purpose developed using a programming language. It is sometimes also called tailor-made or bespoke software.

It is different from packaged or off-the-shelf software, which is typically developed for a mass market instead of for a specific organization.

A process-based application is an application driven by an underlying process or workflow engine. When these applications are developed with a BPM platform, their logic can be graphically modelled to show the logical process of execution.



Process-driven applications

are a growing trend in enterprise solutions involving humans, systems or both. Its systematic approach to creating business applications allows for modification when there are changes in the business environment.

How to compare these two approaches?

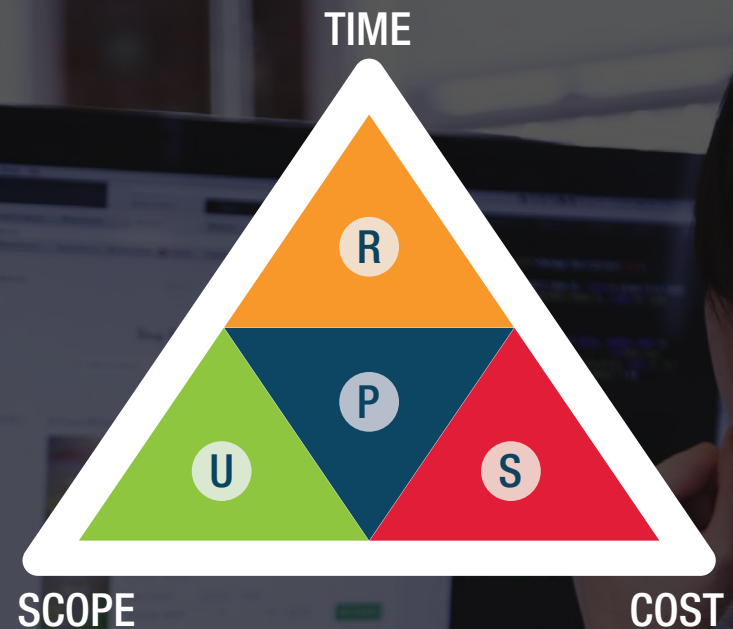
As a tool for assessing these development approaches, we will use the Software Assessment Framework.

It combines the classic project management triangle of Time, [Functional] Scope and Cost with the FURPS model developed by Hewlett-Packard.



for more information:

See the white paper
**Choosing among
Custom Development,
BPM and SaaS.**



FURPS is an acronym for Functional [Scope], Usability, Reliability, Performance and Supportability.

We'll look at all 7 of these criteria.

7 Criteria for evaluation

These 7 criteria are useful to evaluate which development approach fits best with your objectives and your organization.

Let's dive into more detail for each of them for custom (bespoke) application development and process-based application development.

1 TIME-TO-MARKET



2 FUNCTIONAL SCOPE



3 COST



4 USABILITY (OR USER-FRIENDLINESS)



5 RELIABILITY



6 SUPPORTABILITY



7 PERFORMANCE



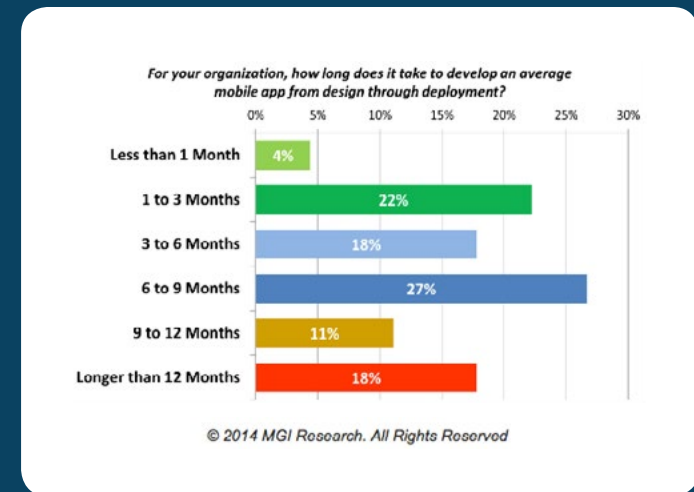
1 Time to Market

The sooner your software application is available, the better—to secure a “first-mover advantage,” respond quickly to market demand, and deliver business value.

Faster time-to-market with process based development

A lot of time is saved not only in the requirements definition and scoping phase, but also during development. A collaborative modeling environment, graphical tooling, robust process engine, and integration capabilities with external applications, saves development effort.

Scalability, security, performance, user management, application deployment, and testability are also natively available in BPM platforms.



Did you know...

...most organizations need **6-9 months** on average to release a new mobile software app? 56% need 6 months or longer, and one-third of them need more than a year to release a single app. As most apps are custom-built, and have relatively modest functionality, you can draw your own conclusions how much (longer) custom development of a business application will take...



Faster design and development of user interfaces with process-based applications

A good BPM application development platform supports technologies to create application user interfaces quickly.

When BPM platforms embrace open and current technologies like Angular JS and HTML 5, the customer is not locked into proprietary technology, which is critical for growth and flexibility to extend the UI based on business needs.

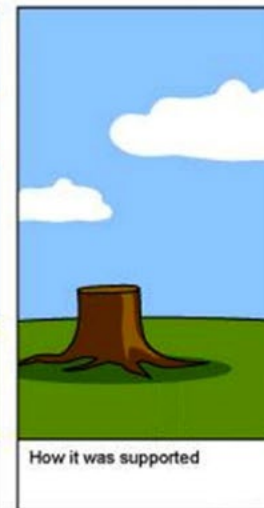
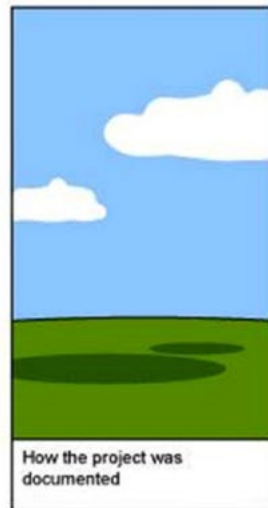


AngularJS

is an open-source web application framework to simplify both the development and testing of applications, by providing a framework for client-side model-view-controller (MVC).



2 Functional Scope



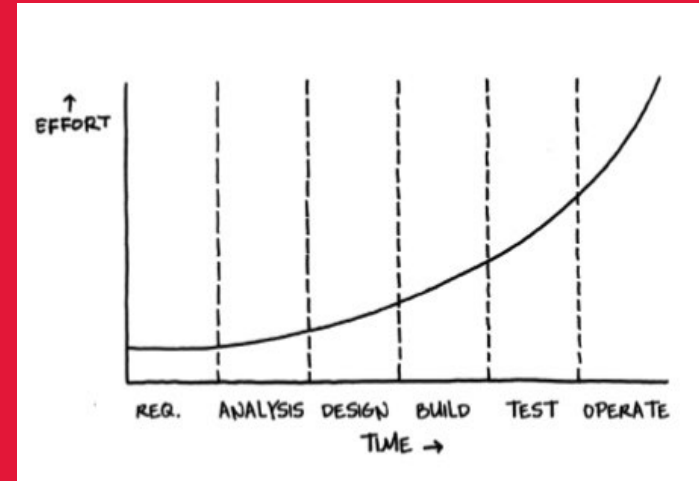
FUNCTIONAL SCOPE

The scoping phase of an application development project is typically the toughest phase, as requirements can be incomplete or not aligned with what users expect. This requires communication, perseverance and patience.

Collaborative scope definition with process-based development

A process-based approach helps to bridge the communication chasm between business users and software developers. Requirements are developed collaboratively and not “thrown over the fence.”

Further, a process-based approach allows the agility to change and evolve over time.



Did you know...

...that according to Barry Boehm, “errors are most frequent during the requirements and design activities and are the more expensive the later they are removed” (the First Law of Boehm). An error made in the requirements phase has a much larger impact than an error made in the build or test phase. So, scoping is a crucial phase!

Standard notation and graphical modeling bridges the communication gap between business and IT

Collaborative development in process-based application development is enabled by the use of graphical notation of BPMN in many process modeling environments. Using this standard helps avoid a lot of the typical miscommunication and back-and-forth in custom development environments that leads to gaps between what the business user wants, and what the developer is creating.

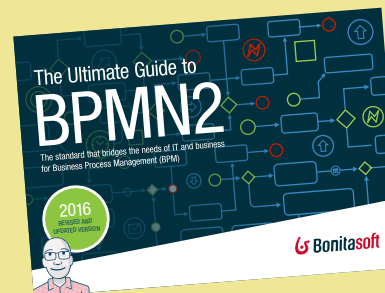
Using BPMN, the business expert can easily adjust steps that were wrongly interpreted by the developer. And the developer can easily show where additional requirements are needed, for example more detail about business rules to apply for a step or between two steps.



Did you know...

...the process modeling environment in most modern BPM application development platforms are based on BPMN 2.0.

BPMN (an acronym for Business Process Model and Notation) is an accepted OMG standard. Its graphic notation makes business process models human-readable and easy-to-interpret, and behind it is code that is read directly by the BPM engine.



for more information:

Get the ebook:
The Ultimate Guide to BPMN2

Parallel definition of logic, data model, and user interface requirements permits a full view of the application

The associated user interfaces (forms, web pages, and so on) and the business data model can be developed in parallel with the business logic.

Developers can show the implications of specific data choices by generating a user interface on top of the data model.

This instantly makes data types and relationships between data fields transparent to the business user, increasing overall quality of the outputs or the requirements and definition phase.



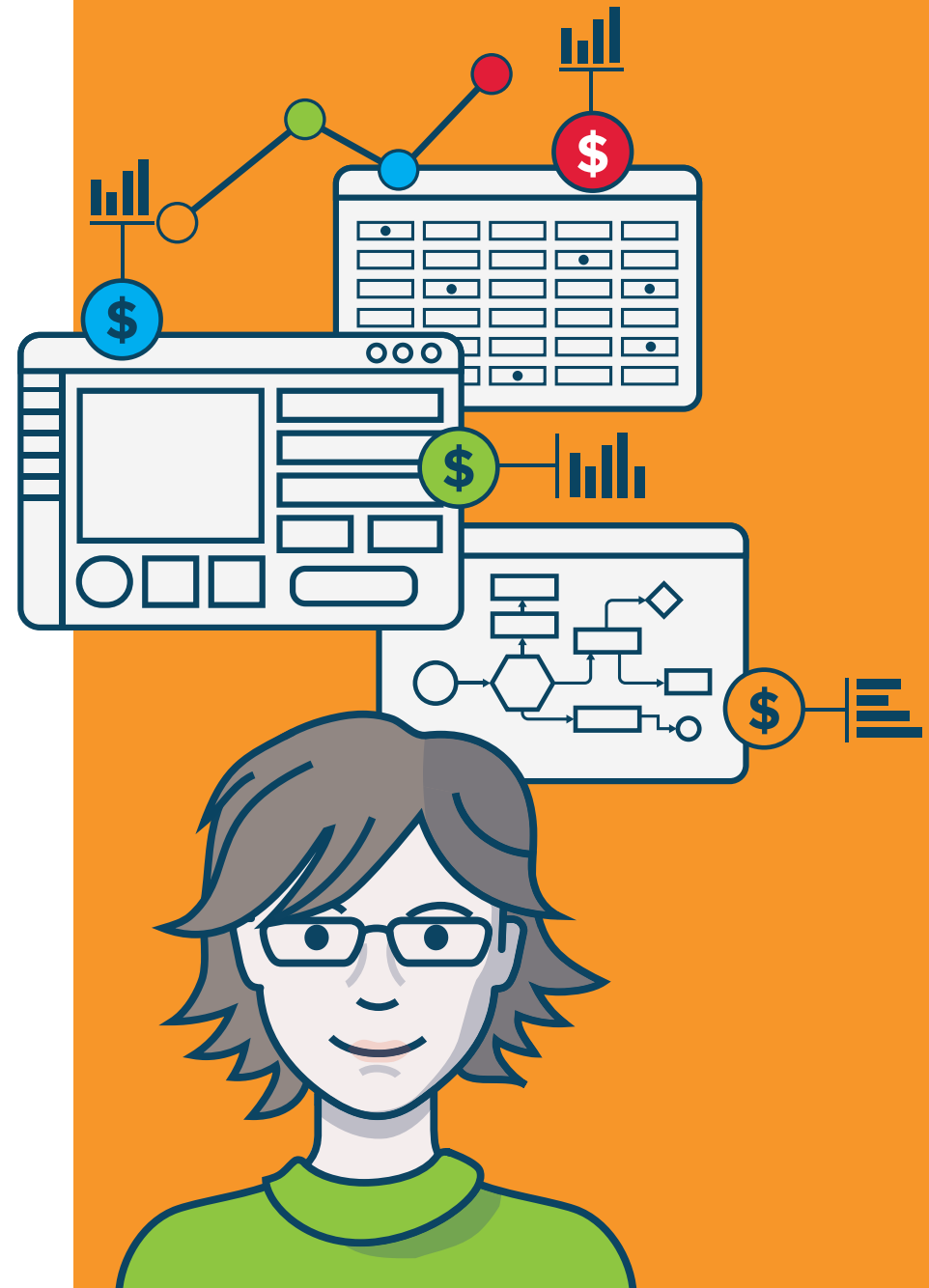
3 Cost

Costs for application development includes not only initial development costs, but also maintenance costs.

Lower development costs with process-based development

Process-based application development platforms offer high-value-for-money. Efficient requirement specification and design phases drive down time needed and costs involved.

Out-of-the-box capabilities such as connectors for system integration, user interface generation including support for mobile devices, clustering and fail-over, and user management boosts developer productivity.



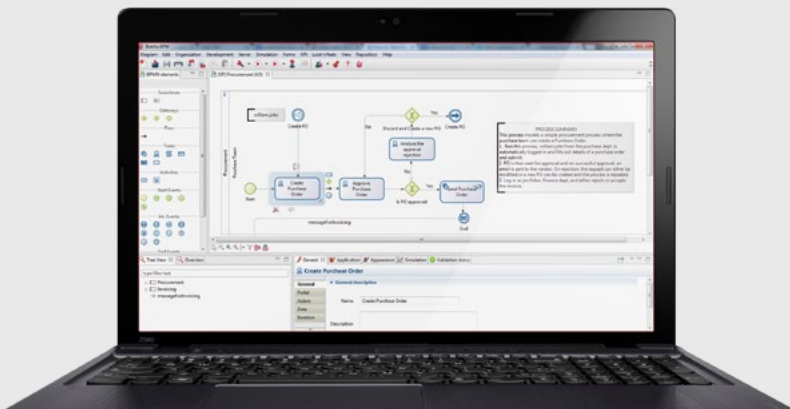


Lower maintenance costs with process-based development

Process-based applications not only benefit from more efficient definition and development, they can also save maintenance costs when deployed applications can be easily updated.

Lower maintenance costs and less down time means lower costs down the line.

Bonita BPM separates business logic, data and UI so they can be changed independently from one another. Business applications built with Bonita BPM can be modified after deployment when user interfaces, business logic, or technical environments change—without interrupting the running application.



Did you know...

...according to Gartner research, 34% of IT budgets are spent on application development and maintenance. In 2013, \$542 billion was spent on custom built software applications and middleware.

The same research indicates that costs for application development and maintenance **can be cut by at least 50%.**



4 Usability (or User-Friendliness)

Usability is often associated with end users, whether customers or business users. The business users should be enabled to be as productive as possible, and any end users have to feel comfortable working with an application.

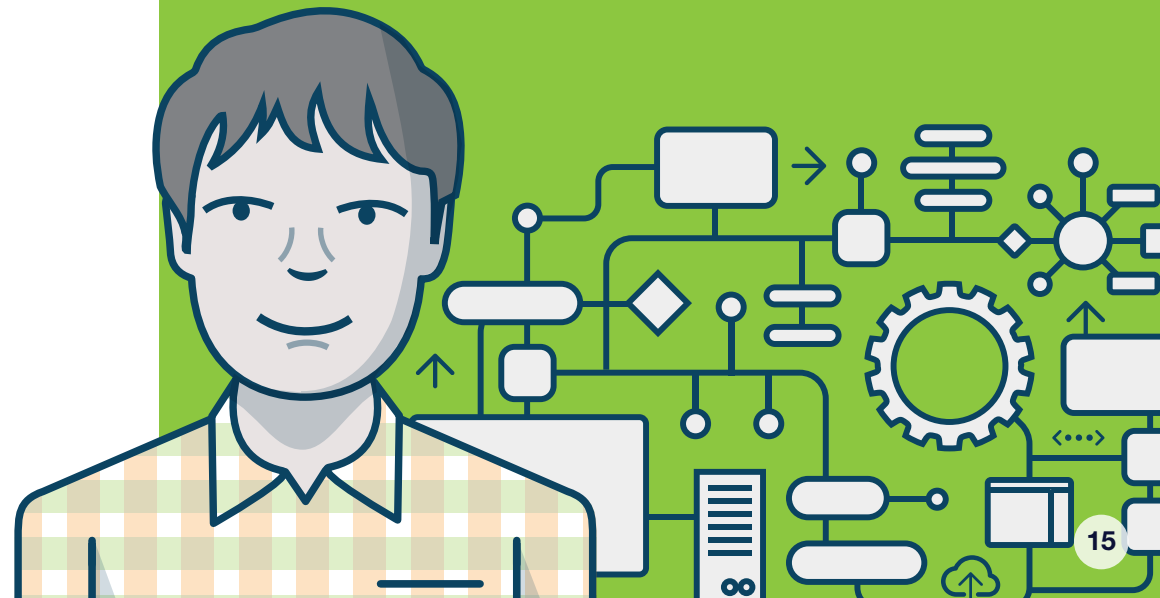
But we should also consider the *productivity of the application developer*.

Custom development platforms are intended for developer usability, but have no real focus on the business user. Where some BPM platforms have a stronger focus on the business user, their limited customizability can really limit developer productivity.

But today's most sophisticated process-based application platforms cater for both audiences: business users and application developers.

Did you know...

...BPM process-based application development platforms readily offer tools that support the creation of process and data models, and generate basic (business) user interfaces as a first step towards a fully customized user interface. They also provide a common repository for all artifacts needed – process models, data models, user interface components – to enable reuse and sharing.





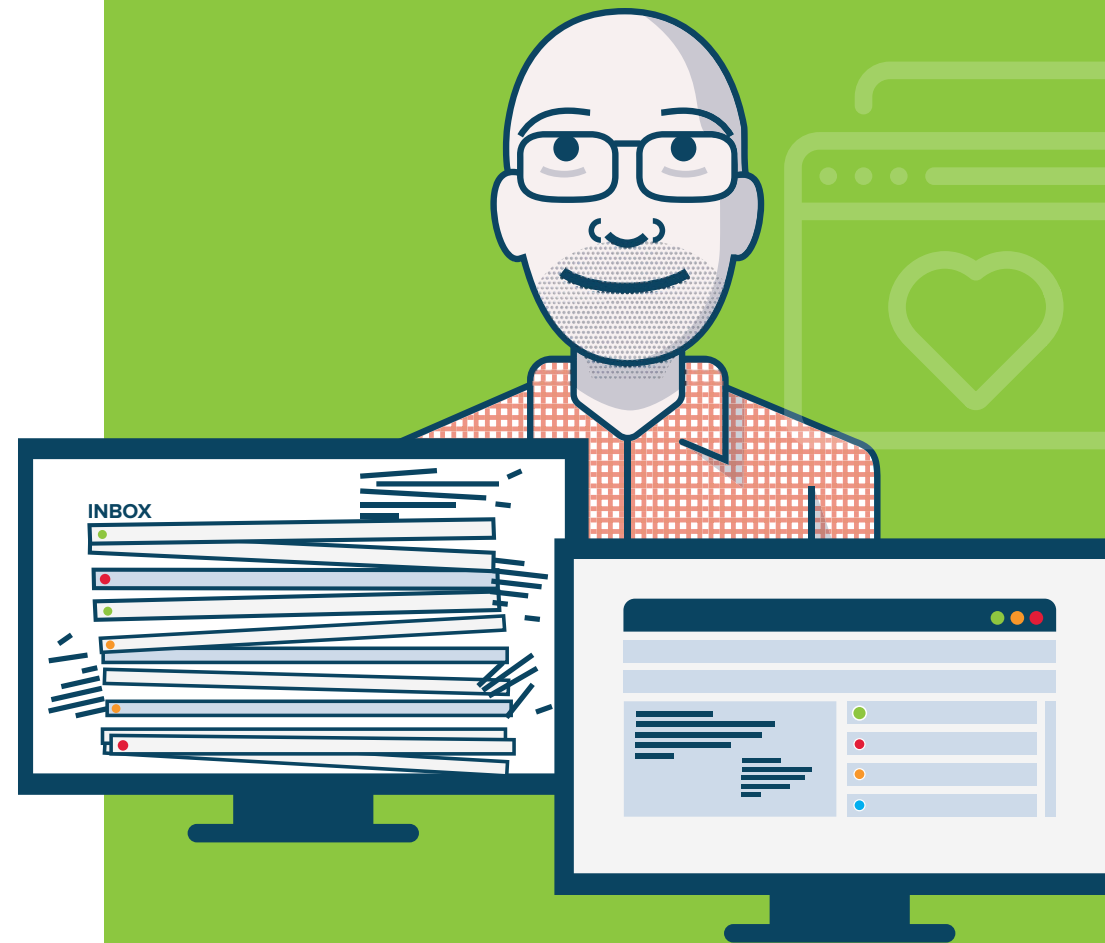
USABILITY (OR USER-FRIENDLINESS)

“In-box” vs “application”

Applications built with some BPM platforms offer an inbox-driven user interface (UI) to business users.

When an activity or process step requires action by a specific business user, a task automatically appears in the user’s inbox or task list. From their inbox, the user can then perform the task – for example, to approve an employee’s time sheet.

However, feedback from business users has shown that not all of them like to work from an inbox-driven user interface, especially when it does not match well with the way business users do their work. It is often not easily customizable to reflect different information needs for different roles in the organization.





USABILITY (OR USER-FRIENDLINESS)

Modern process-based application platforms permit highly flexible, customizable user interfaces

Developers can design a customized user interface that works on all devices, using tools based on a framework such as AngularJS.

Developers can create a rich user experience, with full support for responsive UI.

The user interfaces can be further personalized by roles so that all of the information (forms, data, and more) is tailored to the needs of a specific group.

Since customized user interfaces are often a key requirement driving the choice for custom development, it's important to know that this is also available on modern BPM application development platforms.

Did you know...

... modern process-based application development platforms provide a flexible user interface designer with both out-of-the-box widgets and development tools to create engaging, customized user interfaces.



5 Reliability

Software applications need to be reliable. If users can't trust that business data is being treated accurately, and that the application is available when they need it, the adoption and usage of an application will come to an abrupt halt.

High reliability with process-based development

In application development, one of the ways that reliability can be supported is by clustering applications.

Process-based applications that are built on a BPM platform support clustering and fail-over natively. This avoids costly down-time for applications.

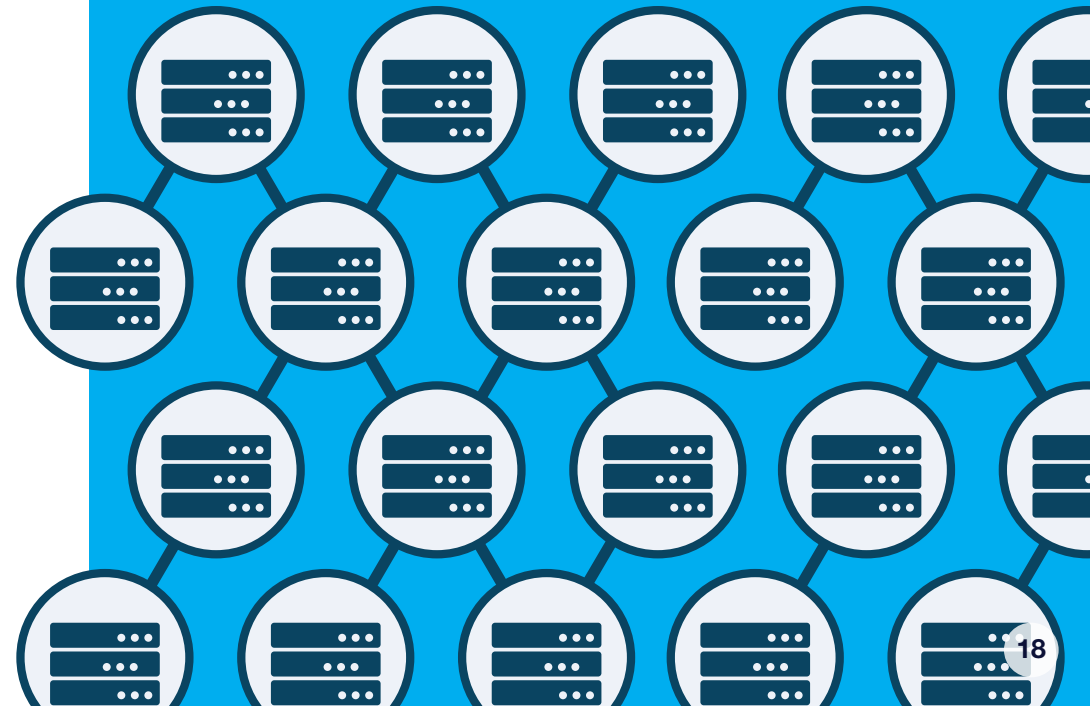
Custom applications typically require development to support high reliability .

Did you know...

...clustering connects multiple computers, that can be used interchangeably.

Clustering makes high availability of applications possible. If one system fails, others can immediately take over (also called fail over).

Moreover, clustering allows for load balancing in order to provide overall better performance.



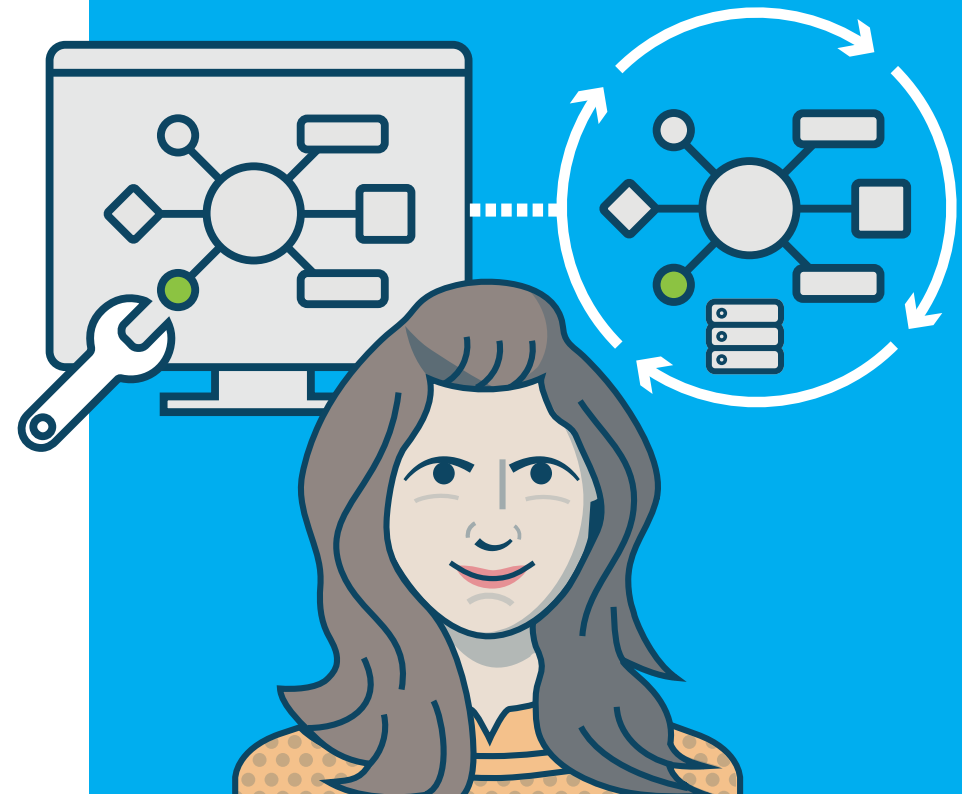
Fault tolerance with process-based development

Fault tolerant applications continue to operate properly in the event of an unexpected failure in one of its components. Suppose you have an application that requires some data from your ERP system. If the ERP is down, what should happen? Will the entire application “stall” and wait forever, will it crash resulting in data loss, or will it handle this situation neatly?

Being able to repair a technical issue in a running process – like an API change in an external system the application is linked to – not only helps fault tolerance, but keeps the application live and available to users.

Did you know...

...when process-based applications include a replay function, it allows administrators to repeat a step that failed – due to external system unavailability, or API changes, or other technical issues that the technical team can fix “on-the-fly.”



6 Supportability

Another important way to keep maintenance efforts low is to think about supportability right from the start. It is not something that can be easily “architected in” after the application has already been released.

Better supportability with process-based development

Custom code needs to be designed to be extensible to bring down maintenance efforts. This is often overlooked.

When developers can change the business logic, the user interface, and the data model independently, as in some process-based application development platforms, modifying one component independently saves time and money.

Did you know...

... **that maintenance costs** can consume up to 4 times the initial application development costs?

Finishing a software development project does not mean that it's done—maintenance is an ongoing pain-in-the-neck that can cost **20-25%** of the initial investment annually. This number can be as high as 80% if it includes future modifications and improvements. An application built for \$200k can eventually cost \$1M when maintenance is taken into account.



Supportability in a Business Application

A “live update” capability enables developers to modify an artifact without stopping the application.

On a running process instance, changes can be made right away and are immediately available in the live production environment. Only sophisticated BPM process-based application platforms support this very useful feature.

It means that without any downtime or business stand-still, changes can be made to a process, data, or the user interface. This saves money for the business, avoids end users getting annoyed or losing trust in the application, and reduces the total throughput time needed for developers to deliver a fix or new feature.

Did you know...

...when a process-based application development platform has decoupled processes, data and user interface, running application instances can be adjusted on-the-fly.



7 Performance

Nothing is more deadly for the successful adoption of a business application than poor performance. This means developers are faced with improving the scalability responsiveness of their applications constantly.

Good performance of process-based applications

A good BPM engine can support high throughput and be integrated with most of the popular application servers and databases available in the market today.

Scalability with process-based applications has already been proven to work with millions of simultaneous cases.

Responsive user interfaces are built to be engaging, and to work across multiple devices.



Performance features with process-based application development platforms

A solid process-based application development platform provides tools to improve transaction speed with shorter transactions, optimized database schema, sophisticated caching, multi-threading, thorough session management, support of distributed transactions and clustering. This removes some of the performance burdens put on the developer's shoulders.

Process developers get the tools they need to deliver applications that perform well, and are reliable and robust on a continuous basis – in order to give their business users a top-notch user experience.

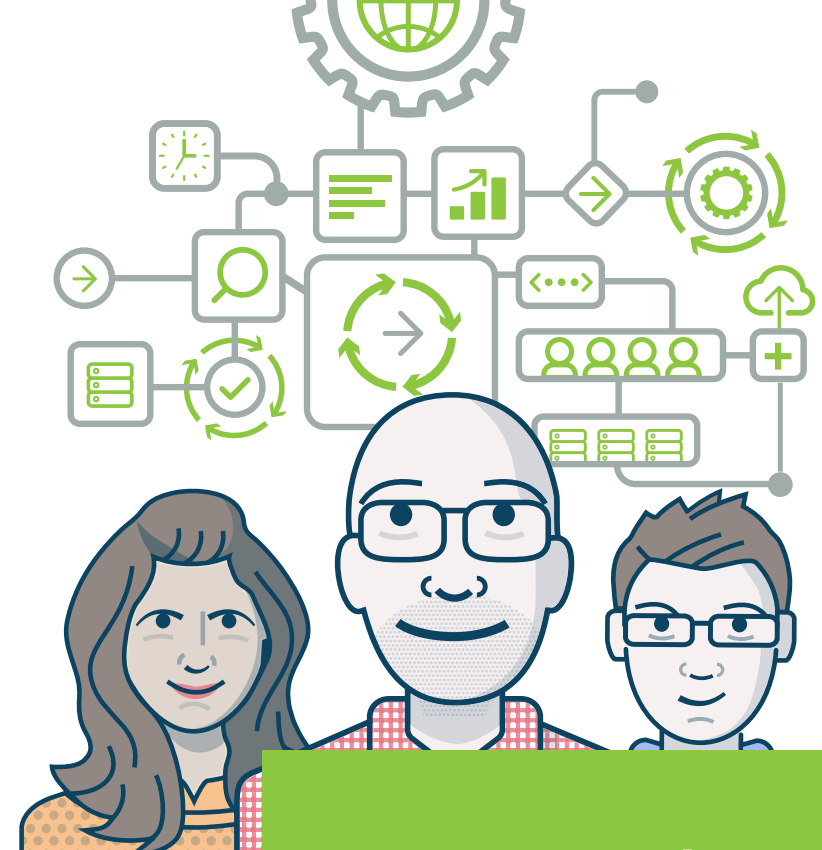


DevOps loves process-based application development

Development organizations that have adopted a DevOps approach are generally very enthusiastic about process-based application development.

DevOps is a software development approach that stresses communication, collaboration, integration and automation.

Process-based application development stimulates and fosters these critical capabilities.



Communication

between business and developers is enhanced with visual process models (BPMN) that represent the end-to-end business process.

Collaboration

is improved, as development of the application's user interface and business logic can be done in parallel by the development team

Integration and automation

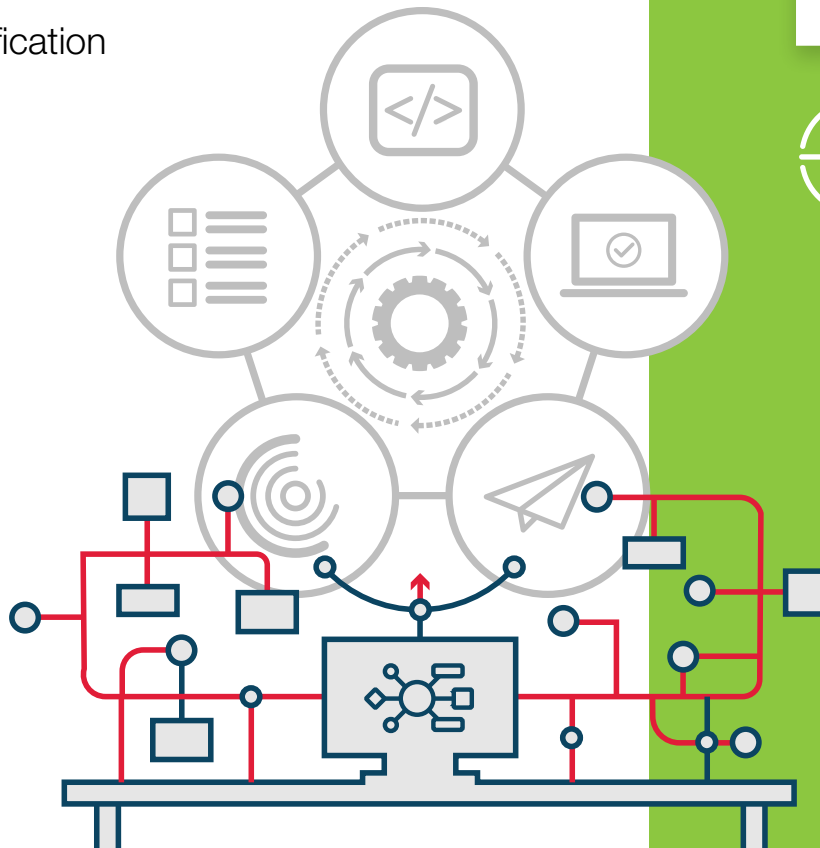
on a continuous basis is supported by sophisticated process application development platforms.

What is more flexible: custom development or process-based development?

Most people would tend to answer “custom development.” But is that really true?

BPM process-based application development brings flexibility to every stage in the application life cycle:

- ✓ requirements specification
- ✓ development
- ✓ testing
- ✓ deployment
- ✓ maintenance



For more on how development with BPM platforms adds value to each stage of the application life cycle

IS TIME-TO-MARKET CRITICAL FOR THE NEW BUSINESS APPLICATION?

IS IT DIFFICULT TO CONVEY BUSINESS REQUIREMENTS TO THE DEVELOPMENT TEAM?

WILL YOUR USERS PREFER TO WORK THROUGH AN INTERFACE SPECIFICALLY TAILORED TO THEIR ROLES?

DO YOU NEED A CLUSTERED, FAULT-TOLERANT ENVIRONMENT FOR YOUR BUSINESS APPLICATIONS?

IS DOWNTIME ACCEPTABLE WHEN UPDATING A BUSINESS APPLICATION?

WILL YOU NEED TO MODIFY USER INTERFACES, BUSINESS RULES, OR TECHNICAL PARAMETERS IN APPLICATIONS THAT ARE ALREADY LIVE IN PRODUCTION?

IS FINE-TUNING OF THE APPLICATION WITH USER INPUT GOING TO BE NEEDED?

Questions to ask before you choose a development approach

If you answered yes three times,
you should have a look at process-based application development.

If you answered yes four times or more,
then you definitely want to check out Bonita BPM!

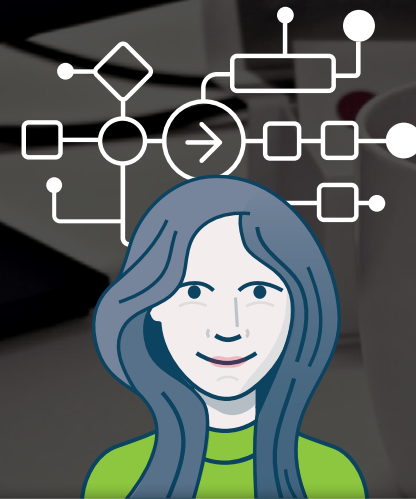


See for yourself how BPM can be a great alternative to custom application development

- ✓ Fast time-to-market
- ✓ Collaborative, flexible functional scope definition
- ✓ Lower cost
- ✓ Good usability
- ✓ High reliability
- ✓ Longer supportability
- ✓ Good performance

Sometimes you need custom development...
But usually, you don't!

Get started today by
building a business process
application with Bonita BPM

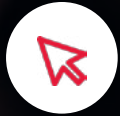


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