

## INTRODUCING QAD ADAPTIVE APPLICATIONS

### ADAPTIVE ERP AND MORE, ALL BUILT ON THE QAD ENTERPRISE PLATFORM

#### About QAD

Founded in 1979 by Pamela Lopker, QAD provides integrated enterprise solutions for manufacturers. Forty years later the company is still focused exclusively on manufacturing and has grown to have 1,900+ employees supporting customers in over 100 countries around the world.

Headquartered in Santa Barbara, CA, QAD is publicly traded (NASDAQ – QADA) and closed its fiscal 2019 with revenues of approximately \$333 million.

QAD Adaptive ERP is a good fit for the following manufacturing industries:

- ✓ Automotive
- ✓ Consumer Products
- ✓ Food & Beverage
- ✓ High Tech
- ✓ Industrial
- ✓ Life Sciences

*QAD Adaptive Applications is a portfolio of flexible solutions for manufacturers, with QAD Adaptive ERP at its core. Founded in 1979 by Pamela Lopker, QAD has always set out to provide an integrated system, laser focused on manufacturing. That focus has never wavered, but over time the underlying technology and the functional footprint have evolved. Just as Material Requirements Planning (MRP) evolved into Enterprise Resource Planning (ERP) for manufacturing, QAD's solutions have also grown and matured. Even as disruptive technology is killing off older companies, QAD is still growing strong. But the leadership is smart enough to recognize, "What got us to here won't get us to where we are going."*

*For years now the company has been committed to the Effective Enterprise, defined as "every business process running at peak efficiency and perfectly aligned to the company's strategic goals." QAD remains just as committed as ever to this goal, but now adds the ability to adapt. In the words of CEO Anton Chilton, "We need the Adaptive Enterprise to sense – plan – act. For this you need a different kind of technology."*

*The journey that led to this different kind of technology began at a pivotal point in 2013 when QAD mapped out what it wanted to achieve:*

- ✓ full functionality operating in the cloud
- ✓ easy extendability with no or low code
- ✓ modular upgrades without redoing extensions
- ✓ Internet of Things (IoT) support
- ✓ real-time analytics
- ✓ a powerful, web-based user experience

*This realization led to the launch of a multi-phased internal project, called the [Channel Islands Initiative](#). By 2018, what started out as a user experience initiative had been transformed into an enterprise platform. The result: a re-architected underlying application infrastructure, a fresh set of RESTful application programming interfaces (APIs), and a new future-proofed user interface (UI), including the framework for connecting devices.*

*While features and functions are still important today – actually more important than ever – the secret to "adaptive" applications lies in the QAD Enterprise Platform.*

#### Data Source

*In this report Mint Jutras references data collected from its 2019 and prior Enterprise Solution Studies. For years this annual study has investigated perceptions, goals, challenges and status of software used to run a business, as well as the impact of these solutions on the enterprise.*

*This year the study collected responses from 464 participants, from companies of all sizes from very small to very large, representing a wide range of industries. In this report we reference data collected from 227 manufacturers.*

## THE NEED FOR AGILITY

Last year the 2018 Mint Jutras Enterprise Solution Study found 89% of manufacturers believe they face some level of risk in their businesses and/or industries being disrupted by new innovative products, new ways of selling or pricing existing products or services, entirely new business models, or some combination of all of the above. And then of course there are still the more traditional disruptive factors like expansion and growth, organizational restructuring and regulatory changes, just to name a few. Those haven't gone away.

All this disruption can have a cascading impact on business application requirements, making agility - the ability to easily adapt, innovate, evolve and change - even more important than current functionality. Software delivered as a service (in the cloud) is certainly one of the ways innovation is delivered and consumed faster and more easily. But this speed is largely dependent on the way your ERP solution is constructed and the platform on which it sits. This caused QAD to focus attention on the underlying architecture and what Mint Jutras calls "foundational" technologies.

## ADVANCED TECHNOLOGY HOLDS THE KEY

QAD leadership understood it would indeed take a new kind of technology to achieve the goals QAD wrote down in 2013. We included several of these types of technologies in a question in the 2019 Mint Jutras Enterprise Solution Study. While other types of new technologies like Blockchain, virtual assistants (chatbots), 3D printing, predictive and cognitive analytics, beacons and drones supplement the features and functions of applications like ERP (and perhaps get more attention today) those listed in Table 1 are more foundational. It is through these kinds of embedded technologies that today's ERP systems become more "adaptive" and intrinsically provide additional value.

**Table 1: Perceived Value of Embedded (or Foundational) Technologies**

	Strong Perceived Value	Unsure of Value (Show me)	Little of No Value	Don't Know
Microservices architectures / platforms	35%	33%	21%	12%
Move to cloud/SaaS	48%	29%	16%	8%
IoT technologies that facilitate autonomous exchange of data	47%	26%	20%	7%
Support for big data (e.g. in-memory data bases)	44%	31%	16%	10%
Natural Language Processing (voice-based) user interface	26%	38%	26%	9%
Social collaboration tools	26%	36%	28%	10%
Machine Learning	41%	33%	18%	8%
Artificial Intelligence	39%	30%	21%	10%

Source: Mint Jutras 2019 Enterprise Solution Study (manufacturing responses only)

*For the reader with a technical background, a microservices architecture is defined as an architectural style that structures an application as a collection of [loosely coupled](#) services. For those nontechnical readers, think of it as constructing a solution from a set of Lego building blocks.*

*"I don't want everything from QAD. I want QAD to be really good at ERP and make it easy to integrate to."*

Charles Wierzbicki,  
Director of IT, Saint-Gobain Performance  
Plastics, a QAD customer

While a growing percentage of respondents perceive these technologies as providing strong value, on average almost one in three (32%) are unsure of the value. Essentially, they are saying, "Show me." And another 9% (the average across all) simply don't know. And therefore, it falls to industry experts and vendors like QAD to educate their audiences in order to prove the value.

## PLATFORMS AND ARCHITECTURE

Development platforms and microservices architectures, on which applications are built, are perfect examples of foundational new technology. While early ERP solutions were rigid, monolithic structures, today's modern solutions are more component-based. For the reader with a technical background, a microservices architecture is defined as an architectural style that structures an application as a collection of [loosely coupled](#) services. For those nontechnical readers, think of it as constructing a solution from a set of Lego building blocks. Purists hate this analogy, and yes, it is an oversimplification. But it is an effective analogy that resonates with business users who don't have the interest or inclination to dive deep into technical jargon.

Think about how you build a structure from Legos. Each Lego block is made of the same kind of material and is attached (connected) to the other Lego blocks the same way. In many ways they are interchangeable. But by choosing different colors and sizes, and connecting them with a different design, you can make a structure that is very unique. And once constructed, if you want to change it, decoupling some of the blocks and replacing them doesn't destroy the parts that are not affected. There is far less disruption introduced than if you had constructed it with a hammer, timber and nails.

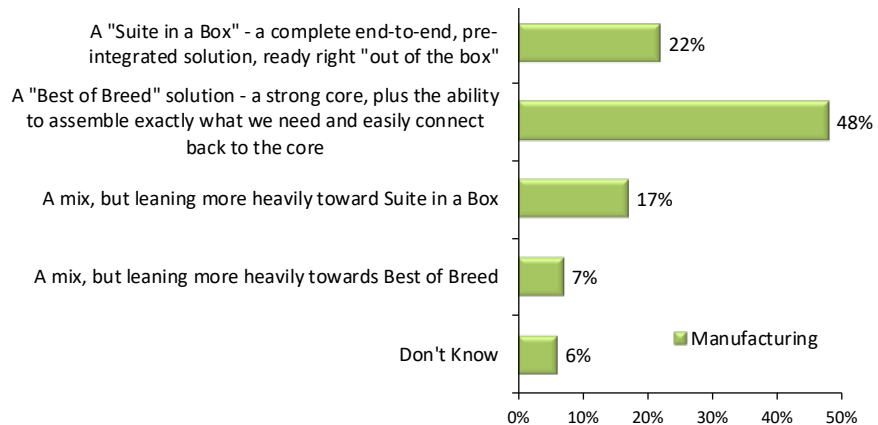
This is the kind of "extendibility" QAD was seeking. And this is exactly the kind of underlying application infrastructure QAD has developed, along with redeveloping all foundational and business process components for a microservices approach, enabled by RESTful application programming interfaces (APIs). This API structure is critical because companies today rarely have only one enterprise application from a single vendor.

Charles (Chuck) Wierzbicki, Director of IT at Saint-Gobain Performance Plastics, a QAD customer, has global responsibility for core business systems at 50+ plants. Across those plants, some functions are managed centrally, and others are managed locally. Chuck's view: "I don't want everything from QAD. I want QAD to be really good at ERP and make it easy to integrate to."

## "SUITE IN A BOX" OR BEST OF BREED? YES

This brings to mind a debate that has been waged throughout the world of enterprise applications for decades: choosing an integrated suite or "Best of Breed" approach. Many ERP vendors have been preaching the benefits of a complete, end-to-end solution and arguing against the proliferation of disparate applications for almost as many decades.

**Figure 1: Which approach is most appealing to you?**



Source: Mint Jutras 2019 Enterprise Solution Study

We asked the survey participants in our 2019 Enterprise Solution Study to choose between a "Suite in a Box" – a complete end-to-end solution that is pre-integrated and ready right "out of the box," or a more "Best of Breed" approach with a strong core, coupled with the ability to purchase or develop additional functionality and easily (we use the term loosely) connect it back to the core. We recognize the choice is not always so cut and dried, and therefore added some options that are more of a mix but leaning in one direction or the other. While the results (Figure 1) surprised us a little (we expected a higher percentage would prefer the Suite in a Box approach), they are somewhat reflective of Chuck Wierzbicki at Saint-Gobain Performance Plastics' view.

*Most manufacturers are interested in a fully integrated, fully functional solution, but they want the freedom and flexibility to implement incrementally, in their own determined sequence.*

Since collecting this data, Mint Jutras also actively sought out discussions with companies, posing the same question. We got very similar results. But then we asked, "Why?" The short answer: most are interested in a fully integrated, fully functional solution, but they want the freedom and flexibility to implement incrementally, in their own determined sequence. In other words, they want both.

Many are also in the midst of a transition to cloud solutions. Although not really a "technology" per se, a move to cloud/SaaS was the entry in Table 1 with the highest percentage of participants perceiving strong value. This move may mean a complete shift, starting with the migration or replacement of an on-premise ERP solution. Or it may mean a more gradual shift, often leaving in place on-premise ERP solutions and surrounding them with cloud-based solutions.

The core points of any debate between suite and Best of Breed center around the trade-offs between ease of integration and depth and breadth of solution. With a suite approach, all modules share a common database and are developed using the same tools and technology. This eliminates data redundancy and any need for separate integration efforts.

In the past specialty functionality built into ERP was lighter and less feature-rich and definitely not “best of breed.” While that may have been the case early on, over the years, ERP solution providers added more robust features and functions through a combination of their own development efforts and sometimes through acquisition. Today they are often (not always) able to compete head to head against stand-alone “best of breed” applications.

It is worth noting however that when this “best of breed” functionality comes as the result of an acquisition, these “acquired pieces” may have been built with different tools and use different physical databases and different data models. While the vendors might deliver this as one integrated solution “out of the box,” they may have simply “pre-integrated” all the pieces without building them into the suite.

*The extensions within the QAD Adaptive Applications portfolio include:*

- ✓ *supplier relationship management*
- ✓ *eInvoicing*
- ✓ *EDI*
- ✓ *trade management*
- ✓ *supply chain planning*
- ✓ *demand planning*
- ✓ *transportation execution*
- ✓ *asset management*
- ✓ *quality management*
- ✓ *IoT connectivity*
- ✓ *and more...*

Over the years QAD has worked hard to build out, not just core functionality, but solutions that further broaden and deepen its footprint. The extensions within the QAD Adaptive Applications portfolio include supplier relationship management, eInvoicing, EDI, trade management, supply chain planning, demand planning, transportation execution, asset management, quality management, IoT connectivity and more. A lot of this functionality has been developed internally, but there have been occasional acquisitions as well.

QAD Dynasys provides the perfect example. Acquired by QAD in 2012, the Demand & Supply Chain Planning (DSCP) solution includes a wide range of applications to address supply chain needs: demand planning, inventory optimization, supply planning, manufacturing planning, financial planning, sales & operations planning (S&OP), integrated business planning and demand driven MRP (DDMRP). QAD customer Saint-Gobain Performance Plastics uses QAD Dynasys DSCP to manage global S&OP and demand planning across 12 plants. Used in conjunction with QAD Adaptive ERP, workers see a common unified user interface across both DSCP and ERP. And yet, DSCP is loosely coupled rather than embedded in a monolithic ERP structure, so it can also be sold and implemented stand-alone.

And therefore, QAD appears to be delivering what our survey participants want: the seamless integration of a suite, with the flexibility (adaptability) of a Best of Breed approach.

## HOW DOES QAD ENTERPRISE PLATFORM STACK UP?

Participants in our 2019 Enterprise Solution Study also ranked the importance of platform capabilities. The results of this ranking are shown in Table 2, sequenced by level of importance, with those seen as most important shown at the very top of the list. These priorities also help explain why our description of “Best of Breed” was favored 2:1 over a “Suite in a Box.”

Adding new features and functions without touching the core of the application takes that top spot. But not too far behind (in third) is the ability to add new features with low code or no code. These two platform capabilities

align directly with QAD's mission to provide a fully functional solution that is easily extended.

**Table 2: Importance of Platform Capabilities**

	Critical/ Must Have	Important	Not important	Don't Know
Ability to add new features/functions without touching the core	38%	53%	6%	3%
Ability to tailor/personalize without needing programming skills	33%	50%	14%	4%
Ability to add new features with low code or no code	28%	59%	8%	4%
Easy integration through APIs	31%	46%	24%	6%
Multi-cloud option (able to run on public cloud of YOUR choice (e.g. Azure, AWS, etc.))	30%	40%	24%	6%
A platform that attracts lots of experienced developers (popular)	21%	52%	20%	8%

Source: Mint Jutras 2019 Enterprise Solution Study

Without these capabilities, the cost and effort of upgrades often prohibits companies from taking full advantage of innovation provided by their solution providers, which in turn prevents them from responding to changing business requirements.

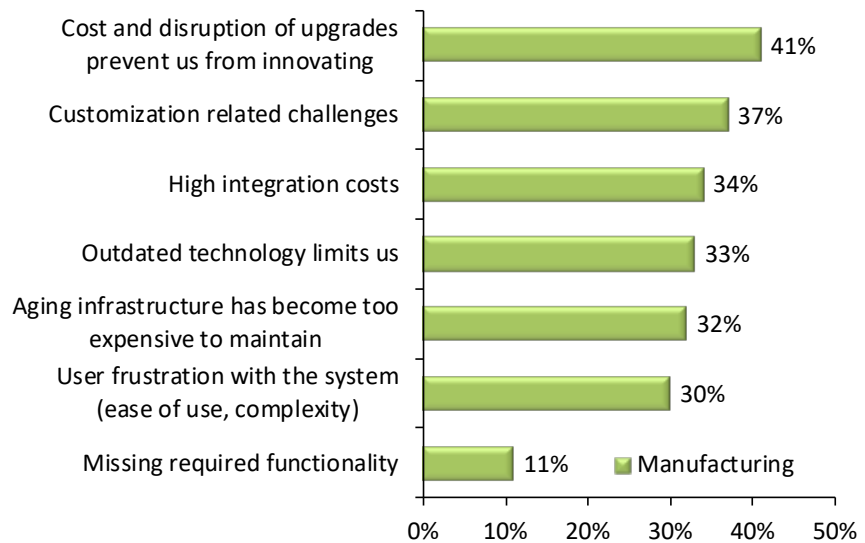
In between these two, the ability to tailor or personalize the application without requiring programming skills was second, which speaks to the user interface and overall user experience. This, of course, was the initial objective of QAD's Channel Islands initiative. The result was a new and improved user experience that is completely role-driven. Called the "Adaptive UX," it consists of two user interfaces (UIs) - the Web UI and the Mobile UI. While the initial focus was to add these development capabilities to the QAD Enterprise Platform for the Web UI, later this year QAD will include more comprehensive capabilities to better support extend-ability and new app development for the Mobile UI.

All these capabilities combine to produce ERP solutions that can live and breathe, constantly evolve and not stagnate. And implementations today must constantly adapt and change.

Indeed, when we asked manufacturers to select the top three challenges they faced in achieving the maximum value from their current solutions (Figure 3), the top challenge was "Cost and effort of upgrades prevent us from innovating" (41%), followed closely by customization-related challenges (37%). The challenges created by high integration costs (34%) took third. Addressing all of these were primary objectives set by QAD back in 2013 and factor heavily in the QAD Enterprise Platform today.

*Revamping the overall user experience was the initial objective of QAD's Channel Islands initiative. The result was a new and improved user experience that is completely role-driven – the "Adaptive UX."*

**Figure 3: Select the top 3 challenges you face in achieving maximum value?**



Source: Mint Jutras 2019 Enterprise Solution Study

## KEY TAKEAWAYS AND CONCLUSION

*Mint Jutras has always preached ERP should be a journey rather than a destination. But it has not always been easy (or even possible) to make that happen... In today's global, digital economy, where the pace of change is accelerating, rigid, monolithic structures are the dinosaurs of the enterprise software world.*

Mint Jutras has always preached ERP should be a journey rather than a destination. But it has not always been easy (or even possible) to make that happen. Legacy solutions were at best an 80% fit, leading many to invest in invasive customizations that built even more barriers to innovation. Making matters worse, these legacy solutions were monolithic structures, making them rigid and anything but adaptive. In today's global, digital economy, where the pace of change is accelerating, rigid, monolithic structures are the dinosaurs of the enterprise software world. But unlike the dinosaur, they are far from extinct. They live on in legacy solutions – those same solutions you are most likely (hopefully?) looking to replace with one built on a modern architecture and a strong platform.

If you are a QAD customer and still running on older pre-Channel Islands versions, it is imperative for you to get current. While a simple upgrade might be possible, depending on where you are starting, it may make more sense to approach the migration as a re-implementation, particularly if it means eliminating customizations. Otherwise you may be dragging along decisions that were made based on older technology and a less fully functional solution.

The latest (post-Channel Islands) QAD Adaptive ERP provides an attractive, appealing and functional user experience that can be tailored to individual roles and needs. And it relieves you of the burden of coordinating all departments around a single, massive and potentially disruptive upgrade process. Don't consider it a final destination, but rather a logical next step with

*Change and disruption can have a cascading effect on your business applications requirements, making agility – the ability to innovate, evolve and change – equally, if not more important. For that you need the right approach to innovation and the right architecture and platform to support it.*

a flexible way forward. With two releases a year and more modular upgrades possible, the path ahead is clear but also flexible.

If you are not currently a QAD customer, perhaps you are (or should be) shopping for a new ERP. If are running on one of those (monolithic) dinosaurs, chances are it has been a long time since your last evaluation. A lot has changed in recent years. Fit and functionality is (still) important. In fact, an 80% fit should no longer be the goal. Look for that last mile of functionality to be delivered without costly and invasive customizations that build barriers to innovation and lead to stagnation.

But there is also danger in making a decision based solely on what you need today. We live in disruptive times and the pace of change is truly accelerating beyond anyone's expectations. Change and disruption can have a cascading effect on your business applications requirements, making agility – the ability to innovate, evolve and change – equally, if not more important. For that you need the right approach to innovation and the right architecture and platform to support it.

Today's component-based architectures and development platforms make solutions more extensible, providing you with the ability to add or change functionality with less disruption to the core. They provide the ability to configure, personalize and tailor your solution with little or no invasive code changes. Look for a platform that allows you to add features with low code or even no code.

Also look carefully at integration capabilities. Even with a suite that is intended to be a complete end-to-end solution, running a single application throughout your enterprise is very rare. And even if you could, how well can you inter-operate with your trading partners (customers and suppliers)?

If you want your business to be "adaptive," perhaps then you should take a close look at QAD Adaptive ERP built on the QAD Enterprise Platform, and the other closely related solutions in the rest of the QAD Adaptive Applications portfolio.

**About the author:** *Cindy Jutras is a widely recognized expert in analyzing the impact of enterprise applications on business performance. Utilizing over 40 years of corporate experience and specific expertise in manufacturing, supply chain, customer service and business performance management, Cindy has spent the past 13 years benchmarking the performance of software solutions in the context of the business benefits of technology. In 2011 Cindy founded Mint Jutras ([www.mintjutras.com](http://www.mintjutras.com)), specializing in analyzing and communicating the business value enterprise applications bring to the enterprise.*