GeneXus™
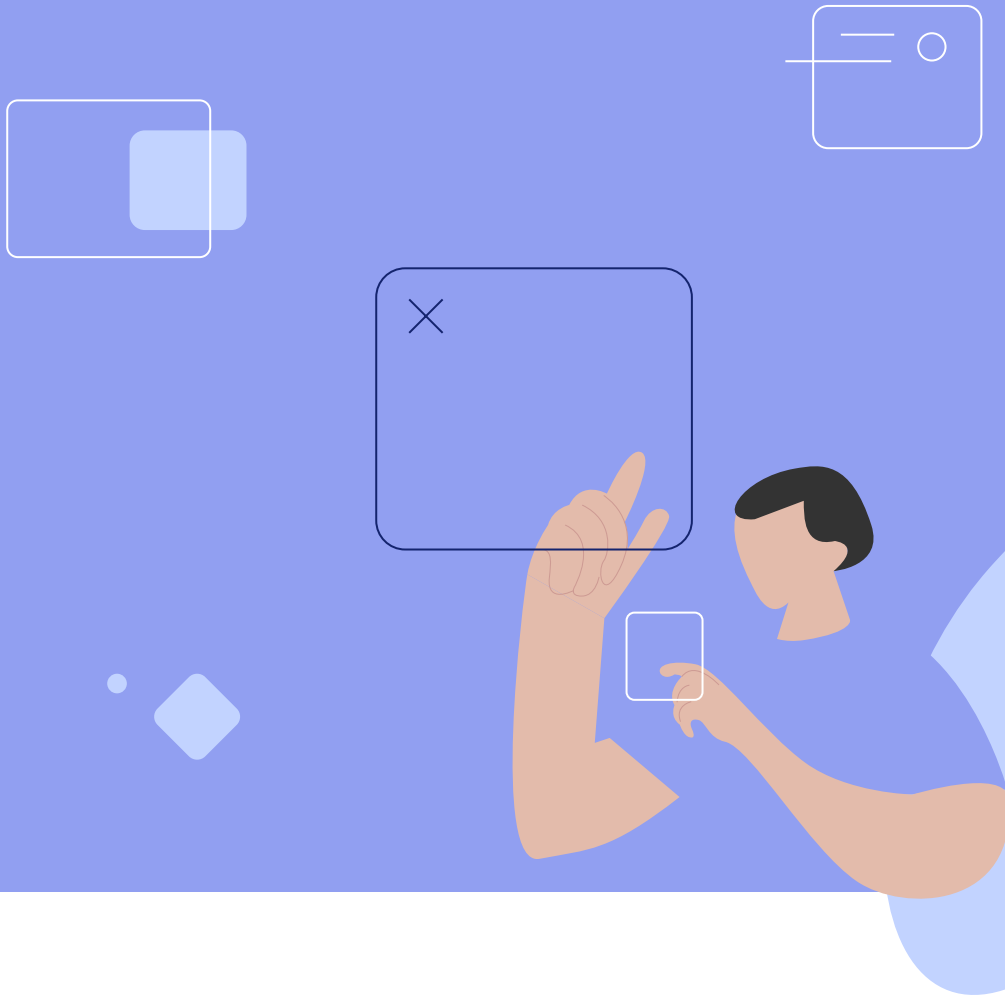
Legacy modernization with GeneXus™

«In times of rapid changes, it is an illusion to think that, when a line of computers is launched on the market, it will continue to be successful three decades later. But it is!».

Breogán Gonda. Chairman of the Board of Directors of GeneXus S.A.

IBM i | iSeries | AS/400 & GeneXus™

Three decades ago we had the basic technology for GeneXus™ but a significant question remained unanswered: for which platform were we going to develop our solutions?

We had multiple options, such as IBM mainframes, Digital VAX, equipment provided by multiple manufacturers with UNIX, PCs, IBMi/iSeries/AS400, among others.

We had to follow only one line, as we were just setting up our company, resources were scarce, and supporting more than one option didn't reasonable, at least in the beginning.

We chose IBMi/iSeries/AS400, we implemented GeneXus™ and launched it to the market in the second semester of 1989.

We were confident it was a good choice based on IBM's commitment, the solidity of IBMi/iSeries/AS400 and the support provided first by IBM Uruguay and, then by IBM South America.

We knew we were able to offer a great added value to our clients, given the high quality standard that GeneXus™ had already achieved and because the solution we were providing was highly compatible with IBMi/iSeries/AS400 technicians' needs, who were RPG-oriented and a high-level platform. Such platform does not require working with low-level details because its OS dealt with that aspect: learning GeneXus™ was simple and fast for those technicians.

In times of rapid changes, it is an illusion to think that, when a line of computers is launched on the market, it will continue to be successful three decades later. But it is!

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Today, this line (IBMi/iSeries/AS400) is still being used across the world and keeps its outstanding feature: its reliability. (In this article, I will always refer to IBMi/iSeries/AS400 because it was the first, because of the meaning it had in the beginning, because it is still important for GeneXus™ today, and because we care for it.)

In these three decades, a lot has been done in the field of software and hardware technologies, in the IBMi/iSeries/AS400 line and its competitors, but the market's perception of this line as a synonym for reliability has remained unchanged.

Although the world has changed a great deal, many applications have been developed for IBMi/iSeries/AS400 in RPG and they still work with austere user interfaces.

However, needs have changed: we must reach the final client or the internal user directly and we need to do it smoothly, intuitively and nimbly.

In order to achieve this, in addition to IBMi/iSeries/AS400 traditional applications, we need to develop a different type of application, initially represented by WEB applications and, above all, by applications for Mobile and Smart Devices (cell phones, tablets, etc.)

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These new applications add new modalities and needs

1. Who is the client?

A client can be external or internal but in either case it cannot be easily trained at a reasonable cost.

It can also be a potential buyer (an entire population) and, as such, totally untrainable, or it can be an internal party in the company that needs to be ale to use our systems quickly and easily.

Overall, business needs have changed and, consequently, so have applications: today they are much more complex.

That is why, instead of forcing users to undergo an expensive training we need to develop better and more sophisticated applications that can be used in a simple manner and offer users a natural, nimble, intuitive and enjoyable interaction, without any previous training.

Of course, having more access to applications entails solving significant security issues.

In other words, new client-oriented applications must be improved to hide complexity, provide security effectively and efficiently and enable a natural, intuitive and enjoyable use.

To that end, these applications are more complex at the internal level and building them by traditional manual programming is not a good choice, as it turns out to be too expensive, slow and filled with bugs.

2. Who chooses the client's hardware?

Mostly, the client who also purchases it. The company barely influences this decision.

3. Who decides to use our system?

The user! There have been many changes and there are many others to come in the next years.

The availability of efficient and accessible technology in constant evolution is important because it facilitates such changes.

But technological changes are not the most important ones: the most important and essential change is that power has shifted to the user.

More than 20 years ago we all knew that the power was going to be in the hands in the final user. However, time went by and that did not happen.

Suddenly, fostered by the new needs of companies society and thanks to the newly available technology, this change took place very fast.

It is an irreversible change and this is just the beginning. It will deepen in the future.

So, we need to ask ourselves: Does this change negate IBMi/iSeries/AS400? Should we develop new applications in an old-fashioned way, using only IBMi/iSeries/AS400 native elements and manual programming? The answers are clear: this change does not negate IBMi/iSeries/AS400 because we still need current applications to continue working properly so that new client-oriented applications are not left unsupported: they must communicate smoothly with the IBMi/iSeries/AS400 database while remaining sound and reliable.

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Of course, we cannot develop our new applications efficiently in an traditional way, using just IBMi/iSeries/AS400 native elements and manual programming. But we must make a constructive change: to develop them with new technology, based on what we already have.

4. Other important changes that have taken place in these three decades

When IBMi/iSeries/AS400 was launched, each installation was self-sufficient and barely had contact with others.

Data entry was fundamentally "Data Entry Oriented". Data was private and exclusively internal for the company. Each application started from scratch and was entirely developed within the company. The use of third-party generic applications, like SAP, was irrelevant.
No data services existed.

Today, driven by business needs, we need to access to third-party data and services and to enable others to access our data, always following clear authorization criteria.

This type of changes is widespread and brings about new challenges.
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5. What else do we need?

We need graphic features and evolved and intelligent dialogs contributing to a great "user experience". If the user interface is not attractive and easy to use, the client will probably not be interested and will not use it.

We need to make user interfaces simple and intuitive, even though they must support sophisticated data access and/or processing.

We need development speed. Today, "Time to market" is critical and development and maintenance times in the future are likely to shrink.

We need platform independence. Which platform do we need to work for? Iphone?, Ipad?, Ipad mini? 4" Android cell phones? 5" cell phones?, bigger cell phones? Android tablets? what size?, WEB using Internet Explorer?, Safari?, Firefox or Chrome?... let's remember that this is the client's choice and, therefore, if we do not support an important choice, we will be abandoning a significant market.

There are several options and, in the case of Mobile and Smart Devices, applications need to fit the position of the device (horizontal or vertical).

And that's not all: access to third-party applications, multiple services and the use of GPS, cameras, sensors, etc. will be necessary in more applications.

What happens when our seller is completing a sale and data communication is not good? Should the client give up on the sale and try again later? No, that is not possible, it would be a huge issue.

Therefore, many of our applications must work "off line" too so, when communications are not good, we will still be able to work off line and then, when the connection is back up we can complete our transactions fully and automatically synchronizing our corporate database with the Smart Device local database.

This is very important but it is valid if, should it be necessary, there is a fluent, reliable and secure dialog between IBMi/iSeries/AS400, the Mobile and Smart Devices and PCs. We need to add technology, but this technology must seamlessly adapt to what we already have in IBMi/iSeries/AS400.

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The solution

We must make a non-destructive, agile and incremental approach.

Company needs can hardly wait for expensive diagnosis and big transformations before obtaining an outcome: we must accept the current reality based on IBMi/iSeries/AS400 and all the applications that run efficiently on it, and then start bringing in results quickly.

For example, if we need to prepare a marketing campaign and launch it in 30 days, we must be in shape to do it, without changing any important element but building on what we already have. Naturally, our new applications, for instance for Mobile and Smart Devices, will interact with whatever current application and with the IBMi/iSeries/AS400 database in a safe and reliable manner.

GeneXus™ provides the solutiont

- Easy to learn: a great learning curve.
- Database reverse engineering.
- Transparent access to the current IBMi/iSeries/AS400 database with high-level operators as if it had been created and managed by GeneXus itself.
- Fast and agile application development.
- Agile and attractive dialogs.
- Active documentation for applications.
- Multi-platform and multi-experience (optimal applications for Apple iOS, Google Android and Web, etc. starting from the same specification).
- On-line/off-line application operation.
- Access to proprietary applications or third-party packages through services.
- Automatically controlled security.

In this article, I don't intend to talk about GeneXus™. I just want to mention a new fortunate coincidence between IBMi/iSeries/AS400 and GeneXus™! But, is it a coincidence?

Or do we just need to accept the fact that, when work is done properly, considering the technology available, the market and, above all, client satisfaction, as IBM has with IBMi/iSeries/AS400 and GeneXus with GeneXus™, coincidences are natural?

Today, just like in 1989, there is a natural complementarity between IBMi/iSeries/AS400 and GeneXus™. This is very good for IBM and GeneXus but, most importantly, for their clients.

Breogán Gonda
Chairman of the Board of Directors of GeneXus S.A

MaddenCo

Building a Mobile Application not only allowed MaddenCo, but also MaddenCo's customers to stay ahead of competition

MaddenCo develops and sells software to tire dealers and truck stop services. Software package includes point-of-sale, warehousing, inventory, bar coding, retreading, accounts payable/ receivable, general ledger, and an electronic interface to leading rubber vendors. Over 270 clients, in 1700 locations, use MaddenCo Software.

Staying Ahead of Competition:

In November of 2011, Kim Angermeier, CEO of MaddenCo, on the advice of one of her customers, set out to offer her customers something that her competition did not. Kim decided it was time to make a mobile application that would provide real time information for the tire dealers and their customers. "For my customer, it helps to get ahead of competition."

Callaghan Tire is one of MaddenCo's customers. One of their customers is a company that owns multiple trucks, they send used tires to Callaghan Tire to replace the rubber and Callaghan Tires stores the tires until the company calls for new ones. With this mobile application, the company with multiple trucks is able to know what tire Callaghan has in stock for their trucks, order the tires, review transactions, and have all account receivables and payables readily available.

Kim explained that this also benefits Callaghan because Callaghan is able to acquire new customers by showing a product that can retrieve information anytime and anywhere, giving them a competitive edge.

Software package includes point-of-sale, warehousing, inventory, bar coding, retreading, accounts payable/ receivable, general ledger, and an electronic interface to leading rubber vendors

Developing the App:

Kim and her team worked with a GeneXus developer and instructor to learn how to use the GeneXus Smart Device Generator. Kim's team received one week of training and were ready to get started on their app. "Training time was minimal, and we picked up on it quick".

Through the GeneXus Smart Device Generator, they were able to call on existing web services and pull their data into the new mobile application. "That's the strong points of GeneXus, I'm not rewriting code every time that new technology comes out, all I am doing is designing a different way to process it," Kim said.

MaddenCo Inc were undergoing various projects during the development of the mobile application. They did not hire any new staff, but created their mobile app all in-house. Working on the app project one day a week over a course of 6 months, they were able to develop their new MaddenCo mobile application. "We only had one person developing it at a time, we took turns each week, a different person would do the coding, so it would be 30 consecutive days with one developer".

"To be able to use GeneXus to create all three platforms, we were impressed" Once the developers created the initial app for iOS, it was easy to customize layouts and generate new apps for Android.

What makes the GeneXus Development Platform a success for MaddenCo Inc is the ability to transition to a new technology quickly and efficiently. Before using GeneXus™, MaddenCo had ten developers; now they have three and are "more efficient then they have ever been."

MaddenCo believes in GeneXus™ because GeneXus™ is always on the cutting edge of new technology and coding platforms. That makes it easy for MaddenCo to move to new platforms and stay ahead of their competition.

Through more than 20 years of development with GeneXus™, MaddenCo has not had to go to a 3rd party for any new technology. For Kim that makes GeneXus™ irreplaceable, from developing the first general ledger package in the 1990's to developing a mobile application now, GeneXus™ has helped MaddenCo provide innovative and competitive software solutions for their customers.

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About GeneXus S.A

GeneXus™ is a multi-platform software development environment that is knowledge-based and model-centric. It is used by more than 8,500 companies for creating data-based enterprise software that runs on servers, desktop computers and on the Web, as well as on mobile devices.

Its agile and accelerated methodology allows automating the most time- and resource-consuming processes in the development, maintenance, integration and modernization of business applications and software systems. GeneXus™ enables users to quickly adopt new technologies and, for this reason, it has been the leading enterprise software platform since 1989.

Due to its unique approach to the creation of flexible applications (based on modeling, generation, and iteration), combined with wide support for current and legacy programming languages and databases, GeneXus™ is an ideal tool for users seeking to bridge the gap that separates their IT infrastructures from new technologies.

Founded in 1988, GeneXus S.A. is headquartered in Montevideo (Uruguay) and has offices in Brazil, United States, Japan, and Mexico. In addition, it is present in 45 countries in Africa, Asia, Europe, Oceania and the Americas.

GeneXus™ is a registered trademark of GeneXus S.A. in Germany, Japan, USA, Uruguay and in several other countries.

"GeneXus is the best low-code platform you´ve never heard of."
The Forrester Wave™. Low-Code Development Platforms For AD&D Professionals, Q1 2019.

Download Forrester´s complete report here:
Official repot: The Forrester Wave™ - http://bit.ly/2N28kQ2

More than Low-Code

GeneXus is an artificial intelligence powered Software Development Platform that hides the true complexity of creating enterprise applications and sophisticated user experiences in an ever evolving technology landscape.

Faster delivery cycles

GeneXus™ simplifies the development and maintenance of all types of corporate applications.

Future-proof

GeneXus™ has continuously evolved over three decades, incorporating the latest trends and technological advancements.

Agile

GeneXus™ embraces agile processes of software development, maintenance, and evolution over time.

Multi experience

GeneXus™ generates and maintains native applications for several platforms and web applications compatible with all browsers.

Easier to learn

With GeneXus™ and only 40 hours of online training, a new developer can create applications for any platform.

Cost savings

Development teams creating apps for several platforms report at least a 12x increase in development speed.

The best code generators in the world.

With over 30 years of experience creating code generators, GeneXus provides a unique platform that captures the needs from users and generates applications for the present and future technologies, without the need of learning each new technology.

Applications run on

We generate and maintain these databases automatically

We generate and maintain these languages automatically

Mobile devices

Web

Servers

Our apps are automatically deployed on these platforms

GeneXus™