

## **Moving Forward with COBOL**

---

## EXECUTIVE SUMMARY

COBOL has a bright future. The COBOL in your applications is the perfect repository for your Intellectual Property (IP) – whatever technology the future has in store. COBOL is entering its sixth decade and continues to take change in its stride.

This paper considers the image of COBOL in the market place and takes a 20:20 view of its standing as a language for today and for tomorrow. We take a look at our vision for COBOL as it leads the way through its next decade.

### 1. THE LANDSCAPE FOR ISVS

Within the current landscape, competition is fierce. As an Independent Software Vendor [ISV] you face not only the traditional head-on competition from other packaged solutions but your customers are being offered a growing range of alternative solutions: new custom-built solutions are being offered by preferred Management Consultancy and/or Systems Integrators; vertical suite applications are being pushed into all but the most specialist business functions; database vendors are offering business rule extraction/RDBMS-based solutions and the new cloud vendors are offering turnkey solutions directly to the line-of-business people in your target organizations. Even your traditional competition is offering new SaaS (Software as a Service) and cloud solutions.

Survival for ISVs involves pushing along two major strategic fronts:

- Entering new markets: finding new types of customers, entering new geographies, offering solutions on new hardware platforms.
- Preserving the installed base: by keeping up to date with functional requirements, with regulation, with hardware platform evolution, integrating new technologies such as ipads, Notepads, cell phones and adapting to their ever changing use.

The environment in which you operate is facing increasing pressures to:

- Reduce time to market: your customers expect your solution to be ready for what they need, often before they are. You need to anticipate and innovate to outpace the competition.
- Control costs: your customers are demanding better value – greater functionality for ever lower prices. You need to review your value chain and contain production costs but not at the expense of quality. You need to offer new pricing policy and evolve from Capex to Opex.
- Avoid risk: your customers require high quality, ever shorter deadlines, commitments on SLAs and guarantees of service. You need to industrialize your processes.

Technology change has enabled competition to threaten your markets, fortunately, it also presents you with enormous opportunities to fight back and outstrip your competition.

### Staying ahead

As the changes in technology and market dynamics accelerate, it is important to differentiate between the new technology you should use and that which you should ignore; choosing only the technology that makes your task easier, your products more valuable, more attractive or easier to sell. Selecting between technology that adds real value or is a distraction; what will last and what will wither. You also need to identify what technology is old and should be replaced, and what technology has been around for a long time but still is the best tool for the job.

The core of your IP is wrapped up in the code that makes up your solutions. Your differentiation, your unique value, your distinctive competencies, whatever you call it, this IP is the root of the value of your software company. By keeping it safe, nurturing it, understanding it and adapting it with the lowest risk and the highest agility you protect and grow this value.

Extending and enhancing your applications allows you to:

- stay competitive by introducing new functionality, new connectivity, new compelling user interfaces
- stay current by meeting new regulations, embracing new work patterns
- stay ahead by anticipating changes in the market, embracing and exploiting new technology
- enter new markets by extending your geographical reach, offering mobile user interfaces, Web interfaces and adapting the functionality of your applications

- win new customers with new compelling user interfaces and stable, high performing programs
- sell more to your customers with new modules and options, the higher value-add of new delivery models such as SaaS and the cloud.

Within this fast moving environment your key challenges include meeting the increasing expectations of your customers, making the best use of the resources you have — at the same time ensuring your intellectual property is maintained, improved, modernized and safe, that is in a state that your applications will continue to give value in the long term.

## 2. THE VALUE OF COBOL

COBOL is one of the major programming languages in use today. It is used by some of the largest ISVs with millions of customers and some of the smallest ISVs with just a few customers, and ISVs of all sizes and types in between. All rely on COBOL for its traditional strengths of performance, portability, accuracy, reliability and the speed in which it can be learned. Some use it because they always have, others because it has had unrivaled longevity and is set to outlive all the other programming languages. In fact, it is the perfect store for an ISV's intellectual property.

However, for all its performance, dominance and technical merit, COBOL still has a real image problem and many myths persist about COBOL.

### Myth 1 - skills shortage

Most conversations about COBOL turn to the subject of a perceived skills shortage. The people who started their careers on the early COBOLs are set to retire, taking with them a lot of the knowledge and understanding about the application structure and logic. It has always been challenging to find the best and the brightest developers – whatever language they use – this is not a COBOL issue but a market issue. The truth is that COBOL can be learned in a few weeks, modern OO COBOL running from a modern IDE such as Visual Studio or Eclipse can be picked up by an IT graduate in a few hours. As for the application understanding, COBOL is arguably the easiest of all the languages to understand. On top of this simplicity, the modern analysis tools can give you an understanding of your applications that exceeds even the most entrenched of your developers.

### Myth 2 - COBOL has been around for 50 years so must be old

The first COBOLs started 50 years ago, around the time of the first Mini cars, the first Lego bricks, the current design of the dollar bill. There is a knee-jerk reaction that, if it is that old, something better must have come along in the meantime.

There is indeed a plethora of new and niche programming languages. Designed for specific niche applications, they perform them very well. COBOL has been designed and developed to specialize in business applications handling massive data sets efficiently, accurately and reliably. The new languages can be integrated into COBOL solutions easily, however longevity has to be a main concern of any programming language or paradigm; even Java and C are considered by some market analysts as aging or legacy.

Modern COBOL can still handle 50-year old applications and has evolved so that today it is used to create some of the most powerful and most modern applications available anywhere; applications that make full use of SOA, OO technology, .NET, Azure, Amazon Cloud platforms to name a few. In fact, modern COBOL is leading the way in many of these areas.

What is important is the value that the language brings and that includes the goodness it has and the longevity.

### Myth 3 - I must rewrite to new language

To rewrite is the natural instinct of the software developer: "I can do better myself", "I can build it better now I know what I have learned", "it would be better if it only had..." Of course, almost anything can be improved upon but the value of the IP, and testing, of your existing applications, combined with the replication of effort and 'opportunity costs' (what else could have achieved with the time and effort) outweighs the benefits of a rewrite. The real showstopper is the risk of failure. We speak to many organizations that are considering a rewrite, usually when new people have entered the company and want to make an impact. We speak to them again further down the line when customer needs and business requirements have become more important than the name of the programming language used.

It is not the language that is the issue. It is the platform, the delivery method, the look and feel and user interface, the competitive edge, the cost base, legal compliance, the efficiency, meeting the needs and aspirations of your customers, and your ability to lead the market with innovation and agility that count. COBOL provides all this and more. Simple modernization of the COBOL application retains any and all of these, leaving your IP in a perfect state to face the next demand or required change. You haven't compromised anything, translated anything into un-maintainable code or hand-crafted an alternative solution that will bring new problems along with it.

#### **Myth 4 - I should extract the business rules and automate a conversion to an RDBMS**

There is no secret, Micro Focus would like you to continue to provide your solutions on our application platform. We invest heavily in the reliability, performance, accuracy, portability of the COBOL runtime platforms and provide award winning support and maintenance. We work hard to ensure that your COBOL applications can be understood easily, modernized quickly, used with the latest development environments and link to the newest development language, all so that you can provide the best solutions at the best price to your customers. You can use some of the great business rule understanding and extraction tools that are available; we provide a range of these and redeploy them to a RDBMS 'platform'. RDBMS systems have a lot of strengths but speed, efficiency and simplicity are not among them. A COBOL solution enables you to use RDBMS to manage data as part of a hybrid system, making full use of both technologies with each playing to its strength.

### **3. THE VISION FOR APPLICATION DEVELOPMENT**

Micro Focus has a clear vision for application development to enable you to easily create and modernize compelling, competitive, modern solutions. We do this by focusing on:

- Modern Integrated Development Environments (IDE), 'two plus the cloud', Visual Studio, Eclipse and, shortly, the cloud
- Cross language, simple and efficient use of whatever languages your solution encompasses and needs to encompass
- Highest productivity levels for your developers
- A full range of application analysis and understanding tools.
- Highest quality code, both ours and, through the growing range of tools we are adding to our portfolio, yours
- Efficiency and quality through the industrialization of your development processes
- Highest level of application understanding, removing any skills shortage and enabling quick and agile development
- Remote development, enabling you to develop, test and deploy without having to travel
- Fast learning curve, enabling quick results from our tools
- For our COBOL products to lead the market in application development, not just lead the market in COBOL development
- Portability; develop once, deploy anywhere, whatever the target platform for your applications, including SaaS and the cloud
- Portability in the cloud, on whatever cloud platforms you want to encompass.

Micro Focus is committed to providing this to you, whatever COBOL you are using today, to give you easy and reasonable access to the features and tools that you want and to make this access easy in terms of both technology and commerce.

#### 4. THE VISION FOR APPLICATION DEPLOYMENT AND RUNTIME SUPPORT

Micro Focus has a clear vision for deployment and runtime support. Our objective is to give you the ability to provide your solutions on whatever platform the market demands, and to provide the same levels of performance, accuracy and reliability on that platform. At present we see a groundswell towards commodity hardware and a move towards the x86 platform. In Operating Systems we see a move to Windows 7 and .NET and a second move towards Linux, Unix and JVM. Perhaps the biggest change we are seeing is the drive towards providing solutions on a SaaS basis and hosted on clouds; private, public and cloud API platforms. In its most basic form the cloud is just another platform. With its many benefits, and unique benefits to the end user, the first step is to simply deploy your existing application on the cloud.

#### 5. THE VISION FOR APPLICATION USER INTERFACES

Micro Focus has a clear vision for GUI (Graphical User Interfaces). We are committed to enabling you to:

- create compelling new GUIs to help you win new sales and increase user satisfaction
- use the latest GUI technologies; Ajax, Silverlight, etc.
- add mobile access to your applications
- enter new geographies and new markets with the cloud and SaaS solutions
- provide zero latency roll out, updating all your users at once with SaaS and the cloud.

Our goal is to provide this to you whatever COBOL GUI technology you use. Again, to provide easy and reasonable access to the features and tools that you want and to make this access easy in terms of both technology and commerce.

#### 6. THE VISION FOR THE COBOL LANGUAGE

Combined with a vision for application development, application deployment and UI development Micro Focus has a clear vision for the COBOL language.

We are building on COBOL's strengths while retaining the values of performance, accuracy and simplicity. COBOL has grown significantly but, unlike other languages, COBOL has an international standard. Over years the ANSI Committee has continued to expand and refine the language through several different standards and continues to improve it to keep up with growing technology.

A recent Gartner whitepaper deemed COBOL 'mature' and in the prime of life, while Java and other well known languages are actually considered to be in a declining state. This is a trend seen in every new language; a fast rise in the market and an equally fast decline.

COBOL has grown to match today's business needs and is one of the most portable languages around. A program developed on one machine can, if no machine specific instructions are included in the code, be moved to a Windows, Unix or Linux platform.

COBOL has evolved into a multi-faceted tool that is used for the widest range of solutions from Web to Web Services to client-server applications, while fulfilling its original intention: to process large amounts of data in an efficient manner – efficient in CPU, memory and storage usage.

#### What COBOL can do

COBOL has improved so much over the years. COBOL is in widespread use for...

Web Services, web sites, code-behind, XML data read and write, client-server applications, data transformation, .NET integration, Java integration, Visual Studio.NET, Eclipse, recursive calls, pointers, arrays, bit level data manipulation, write once run anywhere, WPF, WCF, ASP.NET, 32-bit and 64-bit, ActiveX, ADO.NET, Assemblies, Call the Windows API, CGI, COM, CORBA, DBCS, dynamic linking, file conversion, floating point, HTML, ISAPI, memory management, mouse manipulation, multi-threading, National Locale Support, Object Oriented, ODBC, OLE, parsing, spawn processes, SQL – DB2, Informix, ODBC, Oracle, SQL Server, Sybase, UDB, stored procedures, Unicode support, XML formatting and parsing

... to name a few.

Even this is not exhaustive. If there is something missing from the list, do let us know and we'll almost certainly be able to provide you with a working example.

## 7. THE FUTURE FOR COBOL ISVS

This whitepaper aims to make the case for COBOL as the best platform for your solutions. Micro Focus aims to help you maximize the lifetime value of your intellectual property and to keep your competitive edge and your distinctive differentiation.

We have extended our range of solutions to enable you to use new IDEs and Application Understanding and analysis tools to help remove skills shortage, enable cross language development and introduce business agility (and agile development) into your modernization processes.

We are building solutions to enable you to modernize your interface to attract new users, improve user satisfaction and improve customer retention.

Cloud deployment enables you to enter new markets, new applications, new geographies, new user languages, mobile access, and increase your share of your customers spend by providing Software as a Service.

You have real competitive advantage by using COBOL; it is the ideal platform to take you forward – whatever the future holds.

Micro Focus is committed to the success of all our ISVs and welcomes your feedback.

### About Micro Focus

Micro Focus, a member of the FTSE 250, provides innovative software that allows companies to dramatically improve the business value of their enterprise applications. Micro Focus Enterprise Application Modernization, Testing and Management software enables customers' business applications to respond rapidly to market changes, and embrace modern architectures with reduced cost, and risk.

**For additional information please visit: [www.microfocus.com](http://www.microfocus.com)**

© 2011 Micro Focus IP Development Limited. All rights reserved. MICRO FOCUS, the Micro Focus logo, among others, are trademarks or registered trademarks of Micro Focus IP Development Limited or its subsidiaries or affiliated companies in the United Kingdom, United States and other countries. SAP, R/3, SAP NetWeaver, Duet, PartnerEdge, ByDesign, SAP Business ByDesign, and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries. All other marks are the property of their respective owners. WPOSCD0911