COBOL: the language of the ISV
Executive Summary

Whether you are an ISV, a developer or a business manager, 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. New flavours of COBOL continue to keep it relevant and exciting products, such as Visual COBOL, offer contemporary development environments.

This paper considers the image of COBOL from an ISV viewpoint. It assesses its standing as a language fit for today and suitable for tomorrow, both from in the market place and the developer perspective. Finally, 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 and the new threat of the growing range of alternative, custom-built solutions being offered to your customers by preferred Management Consultancy and/or Systems Integrators. In addition, 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 tablet computers, smartphones and adapting to their ever-changing use.

You operate in an increasingly pressured environment and face familiar challenges. They include:

► Reduce time to market: your customers expect your solution to be ready for what they need, often before they are. You must 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. Offer a new pricing policy and evolve from Capex to Opex.

► Avoid risk: your customers require high quality to ever shorter deadlines, commitments on SLAs and guarantees of service. You need to industrialize your processes.

Technology change has enabled the competition to threaten your markets, fortunately, it also presents the market-aware ISV 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 useful new technology 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. Some technology adds real value and some is a distraction; some will last and some will not. Differentiating between what is old and in need of replacement and the technology that has stood the test of time and remains the best tool for the job is a valuable skill.

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 enables you to stay:

► competitive by introducing new functionality, connectivity, and fresh, compelling user interfaces
► current by meeting new regulations, embracing new work patterns
► ahead by anticipating changes in the market, embracing and exploiting new technology
► relevant by entering new markets by extending your geographical reach, offering mobile user interfaces, Web interfaces and adapting the functionality of your applications
► profitable by winning new customers with new compelling user interfaces and stable, high performing programs
► on the right track by selling 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 and making the best use of your resources — all while ensuring your intellectual property is maintained, improved, modernized and safe, so your applications 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 everyone from large ISVs with millions of customers right through to smaller operations with only a few customers. All rely on COBOL for its traditional strengths of performance, portability, accuracy, reliability and take-up speed. Some use it because they always have, others because it has had unrivalled longevity and is set to outlive all the other programming languages. In fact, it is the perfect store for an ISV’s intellectual property.

3. The five pillars of COBOL

While the COBOL of today is future-proof and delivers unprecedented levels of flexibility, it is built on the same principles that has always underpinned the most robust and long-lived programming language available today. We call them the five pillars of COBOL.

Future-Proofing - we currently invest $55m a year in R&D to ensure your enterprise applications meet tomorrow’s needs today. A big proportion of this investment is in COBOL.

Portability - COBOL is the original write once, run anywhere technology. It continues to be in high demand and delivers wherever it is used. There are currently 200 more times COBOL transactions than Google searches worldwide.

Fitness-for-Purpose - COBOL was created for building great business applications. It is the go-to language for the heavy lifting work the enterprise needs: the number crunching, data handling and back-end work. Everything is achieved reliably and quickly

Readability - COBOL’s ease of learning, reading and writing provided a ready skills pool, allowed developers to maintain others’ code, allowing organizations to focus on the business requirements not what the code means

Heritage - with five decades of heritage, billions of lines of value, thousands of organizations actively using it, COBOL has a vast library of business value already available. We all know that valuable COBOL business functions can be easily exploited and reused - much easier than writing from scratch.

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**

Much of the current narrative - and the most regularly-repeated myth - focuses on a perceived skills shortage. Perceived, because inevitably, developers who began their careers on the early COBOLs will retire, and these subject matter experts will inevitably take some dedicated knowledge about the application structure and logic with them. But this is nothing new: finding the best developer talent has always been a challenge and this is not a language-specific problem. Instead, this is more of a market issue - and a resourcing challenge for the host organization who must align resources with a wider business strategy. COBOL is not the issue - the truth is that COBOL can be learned in a few weeks. Even less for those fluent in other languages. The 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 outdated**

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. But our industry is not keen to recognise design classics. FOBO - the Fear of Being Obsolete - prevails. 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 applications, they perform them very well, within that limited framework. But COBOL was designed and developed to specialize in business applications handling massive data sets efficiently, accurately and reliably. While the new languages can easily be integrated into COBOL solutions, longevity remains a key concern for anyone considering a programming language or paradigm - some market analysts even consider Java and C to be aging, legacy languages.

And these languages have not had the benefit of frequent reinventions and refreshes. 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. Modern COBOL is leading the way in many of these areas.

Whether you work with it, want to sell it or manage a COBOL application portfolio, the point is this: the age is not important. This is not a used car. This is the world’s most resilient programming language. It has a residual value and longevity that no other language can offer.

**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 more”, “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 current applications, combined with the replication of effort and ‘opportunity costs’ - in other words, what else could have been achieved with the same 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.

We generally find that it was never the language that was the problem. 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 the 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, as an ISV, to continue to provide your solutions on our application platform. But this is not self-interest. This is the basis of a mutually-beneficial arrangement. This is your opportunity to reap the benefits of our work to support COBOL. Micro Focus 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. Some of the great business rule understanding and extraction tools available to the COBOL-friendly ISV; 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. Use a COBOL solution. You will be enabled to use RDBMS to manage data as part of a hybrid system: this makes full use of both technologies with each playing to its strength.

4. 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:

► Cross language, simple and efficient use of whatever languages your solution currently encompasses or must encompass going forwards
► Highest development productivity levels
► A full range of application analysis and understanding tools.
► Optimum code quality through the strategic use of tools
► Industrializing your development processes to boost efficiency and quality
► Enabling remote development - develop, test and deploy without having to travel
► Reducing the learning curve through better tools
► COBOL products that lead the market in application development, not just COBOL development

Micro Focus is committed to providing this to our ISV partners, 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.

The Platform Choice You Need

ISVs know that platform portability is fundamental to your commercial applications, your customers’ satisfaction - and by extension your commercial success. That is why we execute thousands of test cases across every supported operating system and processor combination, every time we update our products. So, you know that wherever you need to deploy your application, it will work.

Micro Focus products currently support more than 50 platforms, and we are embracing new platforms such as RHEL, Windows 8 and Azure. This is on top of the 500 platforms we have supported over the years.

And its not just platforms – we’ve already certified the technology infrastructure you and your customers need today. The latest versions, Visual COBOL for Eclipse and Visual Studio are the result of our work with Eclipse and Microsoft. We continue support for the latest versions of MS SQL, Oracle, DB2 databases to ensure your application can run in Cloud or mobile environments.

A Micro Focus partner even demonstrated Visual COBOL integration with Google Glass at a recent Developer Day show. At the same show, ISV partners including Aquilon, and Spears Associates showcased their latest COBOL-based application technology.
5. The Vision for Application Deployment and runtime support

Micro Focus also has a clear vision for deployment and runtime support. It is to enable you to provide your solutions on whatever platform the market demands, with the same levels of performance, accuracy and reliability. Of course, platforms and operating systems move on. Windows 10 is already upon us and .NET is well established. We are aware of a second move towards Linux, Unix and JVM. Perhaps the biggest change is the drive towards providing solutions on a SaaS basis and hosted on 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 current application on the cloud.

6. 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.

We will provide this to you whatever COBOL GUI technology you use. We recognise that ISVs want us to provide easy and reasonable access to the features and tools they need and we make this access easy in terms of both technology and commerce.

7. 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. Micro Focus has helped COBOL evolve through its many ISO and ANSI standards. By the 1970s, when the ANSI74 COBOL standard was agreed, COBOL had become the most widely-used programming language in the world. It remains the most reliable.

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. Let us not forget that Java is more than 20 years old yet COBOL, a far more widely-deployed language remains the lightning rod for the ‘old equals bad’ commentators. 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.
8. The future for COBOL ISVs

This whitepaper aims to make the case for COBOL as the best platform for your solutions. Micro Focus can help you maximize the lifetime value of your intellectual property, keep your competitive edge and maintain 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. And the innovation running through this tech is music to the ears of your clients - the developers and those they work for. Because with a little retuning, the future business value of these COBOL applications will fuel technology investment, including modernization. And these applications will remain as COBOL, because few CIOs want to risk the organization's day-to-day, lifeblood processes.

And that is just those who already run COBOL. This constantly-evolving language can now access many more platforms. Cloud deployment enables you to enter new markets, access new applications, enter new geographies, fresh user languages, mobile access, and increase your share of your customers spend by providing Software as a Service.

We understand the particular challenges of the ISV. In many ways, our work to improve application development has been running in parallel with the work of ISVs to develop popular, enterprise-ready software for many years. Not sure? Consider the history of innovation from Micro Focus – the first COBOL compiler for 'microprocessors', the first COBOL visual debugger, the first Windows-based product and the first 32- and 64-bit products. We were also the first to the market with mainframe CICS emulation, and, later object-oriented COBOL. That’s why we say that you have real competitive advantage by using COBOL; it is the ideal platform to take you forward – whatever the future holds.