



See your mainframe applications clearly!

## **White Paper**

**Baby Boomer Retirements Jeopardize Mainframe Projects**

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**IT Staff Retirements Jeopardize Key Initiatives**

Baby Boomers are retiring at an alarming rate. According to Pew Research Center, starting in 2011, there have been an average of 10,000 Baby Boomers turning 65 every day. By 2020, over half of Baby Boomers will be over 65 and half of those will be over 70.

IT departments are feeling the greatest impact, particularly in the areas using older technologies such as Mainframe COBOL. Gartner Research indicates that 80% of the current COBOL talent pool started in IT between 1965 and 1985 and an estimated 50%+ of the Mainframe COBOL workforce will be retired by 2023. This loss of talent will significantly outstrip the predicted project rates, leaving a tremendous shortfall in capabilities for many organizations.

### **What will Mainframe Shops Do?**

In the face of these market challenges, many organizations have attempted to reduce their Mainframe COBOL applications footprint by modernizing some of their legacy systems. Replacing hand-written COBOL systems with commercial off the shelf packages makes sense when possible. Re-writing some applications in more modern technologies i.e. Java might be a viable option as well; however, for many key high transaction volume business critical systems maintaining the application COBOL remains the best option.

While some organizations may choose to outsource COBOL applications support to China or other overseas IT service providers, most are wary due to the age old problems associated with outsourcing. These organizations will have to find alternative answer to overcome the mainframe talent shortage.

### **Increase efficiency of the remaining COBOL staff**

Tools can help! Organizations can invest in tools to improve the productivity of those who continue to work on the mainframe.

COBOL staff spend much of their time searching source code to understand how things fit together. Analysts need to know which programs read and write a file, what batch jobs execute which programs and what programs are called by a certain program. Beyond these kinds of relationship understanding, analysts need to dig deeper to understand how and where data elements are used and how program logic impacts data. All of these kinds of analysis take significant time to search source code and then review and document results to determine which are of value and which have no value. Many programmers spend 70% or more of their analysis time on this type of research.

Automated code understanding tools can significantly reduce research time by 75%. In addition, these code understanding and inventory tools can be used to create a repository of knowledge that will be helpful to ramp up new staff.

By significantly reducing the time for research and empowering “non-experts” to complete work, automated code analysis tools can increase efficiency by 30% or more.

## **Building a new pool of talent**

A number of universities as well as private education and training organizations have initiated programs to train new students in COBOL. These programs have had moderate success, but have had difficulty attracting students willing to learn the older technologies. The potential student has grown up using PCs and Microsoft Windows tools. They likely have done some programming in HTML, Java or other modern language already. When shown the command line utilities/tools used to search and understand COBOL source code, they laugh at the antiquated technologies. “Why would anyone want to work with that?”

Experts predict there simply won’t be enough new graduates to fill the myriad positions that will need to be filled in the next 5-10 years, leaving IT organizations faced with a shortage of available talent.

## **Grow your own talent**

Your organization may be able to find existing IT staff willing to transfer the mainframe team; however, training the new person to understand the syntax of COBOL isn’t enough. They will have the benefit of having domain knowledge but will have grown accustomed to modern IDEs, support tools and a programming architecture that is at least somewhat structured. Faced with the sheer massive scale of the COBOL system, they will become frustrated and won’t want to deal with the old TSO scan to navigate through keyboard shortcuts.

Organizations attempting to grow their own COBOL resource must be willing to invest in modern analysis and programming tools for COBOL to enable the new programmer to research the system in a manner they have grown accustomed to using. This will be essential to making the transition to the mainframe successful. With a modern Windows-based analysis tool, competent programmers with some COBOL syntax knowledge will be able to be productive in a relatively short timeframe.

## **CM evolveIT for ramping up new resources on COBOL applications**

CM evolveIT is the “best in breed” tool for software developers that are needing to get up to speed on a COBOL application that they are unfamiliar with. CM evolveIT pre-discovers and models every aspect of a mainframe application from the screens that users see down to the manipulation of individual data items deep inside programs. CM evolveIT stores the discovered model in a central repository which can be accessed by an unlimited number of CM evolveIT users to produce, store, print, or share a vast amount of information in seconds. CM evolveIT’s completely interactive diagrams, reports and viewers enable mainframe analysts to produce the information they need in seconds reducing the time to perform day-to-day maintenance, analysis, and enhancement tasks by 30% or more.

Unlike traditional mainframe analysis tools, CM evolveIT’s main viewer lists every system component (application programs, copybooks, jobs, screens....) and shows its relationship to

other components so your analysts have all the information at their fingertips. The user interface has easy to use menus with mouse click features that enable the analyst to quickly see the relationships between system components, produce diagrams, and text reports and interact with the documentation, drilling right down to how all the code interacts and is linked together.

A few simple mouse clicks gives an overview of an application and enables the developer to dive into an application with high level diagrams as system maps; the interactive results enable the user to drill down and get exactly what they are looking for. From copybooks used to data usage reports directly from source code, CM evolveIT gives the developer everything they need to quickly understand the application and focus most of their time on resolving problems or designing new functionality.

CM evolveIT provides the analyst with the ability to visualize the system through both system and component diagrams. Analysts can get a system wide impact analysis for data and interactively trace system output data backward through the system to understand the contributing paths and the business logic that impacts how the data is populated. All of these capabilities in CM evolveIT, and many more, give your projects the advantage by quickly moving through the analysis phase with accurate results and providing time savings that is multiplied when you consider how it impacts the time available for your team to produce new value for your business.

As your COBOL analysts retire, you need proven tools to make your remaining analysts more efficient and the capability to get new developer/analysts up to speed and making an impact on your business in days not weeks or months.

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