



Case Study

Cornèr Banca's System z: One Helluva Bill — But Well Worth It!

Introduction

In this *Case Study*, *Clabby Analytics* (that's me) shares the results of an interview that I conducted on-site with Charles Inches, First Vice President in charge of Service Delivery and Logistics for Cornèr Banca of Lugano, Switzerland. Cornèr Banca is a privately held Swiss bank that specializes in private banking (it provides private, investment, asset management, wealth management services, et al), retail banking and Credit Card processing. Cornèr Banca was also the first bank to introduce Visa credit cards in Switzerland back in the '70s and still maintains a considerable premium-service credit card operation today.

When I conduct System z (mainframe) interviews, I generally seek to learn three things:

1. What does this System z user think about mainframe pricing?
2. Is this System z user doing anything innovative with mainframe architecture? And,
3. Does this System z user have any trouble finding mainframe skill sets in his/her given geography?

What Clabby Analytics found during the course of this interview is that Cornèr Banca:

- Has been an IBM mainframe customer for almost 40 years, Cornèr Banca readily acknowledges that mainframe architecture —on its face value — is expensive. But Cornèr Banca quickly counters that System z's "never break" — and that System z reliability makes the money it spends on hardware and software acquisition (as well as on maintenance) "well worth continued investment".
- Is focusing its program development model around Java programming — and is deploying a service-oriented architecture (SOA) on its mainframe. And, although the bank owns Unix and Windows servers, and could host SOA applications on those architectures, the bank has decided its mainframe shall be its strategic SOA server of choice.
- Uses IBM mainframe specialty zIIP (z Integrated Information Processors) on its mainframe, and is evaluating IBM zAAP (z Application Assist Processors). zIIP processors to off-load external queries to DB2 — allowing the mainframe to be used as a major data hub. As for zAAP processors, the bank may use zAAP engines to off-load Java Virtual Machine cycles when the bank's movement to Java matures.
- Has not experienced a problem locating mainframe skilled individuals (including COBOL programmers), even in off-the-beaten path, picturesque Lugano.

The remainder of this *Case Study* discusses these findings in greater detail.

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Background: Cornèr Banca

Cornèr Banca is an independent, private, Swiss banking institution, established in 1952 in Lugano, where its head office and general management are still located. It operates in all traditional banking services and its main activities are private banking, lending and credit cards services. In addition to its local business, the bank has expanded its services and branch locations to meet its clients' international requirements. Accordingly, in addition to the parent company and two Swiss branches in Locarno and Lausanne, Cornèr Banca Group has several affiliate branches including Cornèr SIM SpA, Milan; Cornèr Banque (Luxembourg) SA and Cornèr Bank (Overseas) Ltd., Nassau. The foreign affiliates of the Group focus predominantly on asset management — and Cornèr Banca also offers trust services in Italy, through CFG-Compagnia Fiduciaria Generale in Milan.

Since its foundation, private banking has been Cornèr Banca's principal area of business. The bank offers a potentially limitless mix of banking products and services aimed at providing a full range of services tailored to meet all the requirements of private clients. These services range from asset management to consulting on complex legal, fiscal and/or business issues. This tailor-made consulting offers private clients and entrepreneurs a range of services, which fall into the main spheres of private (family office) and corporate.

Cornèr is specialized as depositary bank for Swiss investment funds; it also runs a full-fledged treasury, forex and stock market department both to support the needs of private banking customers and to offer products and services for professional investors.

Customers are also offered the possibility to obtain mortgages and credit lines.

Another important business activity of Cornèr Banca is the issuing of credit cards. It was the first Swiss bank to introduce VISA cards in Switzerland in 1975. Since then, the activity has been increasing steadily, as its profitability. The success achieved with VISA cards encouraged Cornèr in 1998 to begin issuing MasterCard.

Information Systems at Cornèr Banca

From an information systems perspective, Cornèr Banca is proud of the fact that in 1965 it was IBM's first mainframe customer in the Italian speaking region of Switzerland. The company understood from the very beginning what advanced technology could do for its customers and its products. And the company also understood that deploying a mainframe would help reduce its own operational costs (an army of accountants would no longer be required to perform basic mathematical functions to formulate recommendations for Cornèr Banca's customers; and mainframes could also perform business functions such as general ledger, accounts receivable/payable, etc.).

At Cornèr Banca, mainframe technology has advanced over the years from simple, volume transaction processing to a complete, run-the-business platform. Hundreds of custom programs have been developed by Cornèr Banca (in the COBOL programming language) to provide basic accounting, and more advanced custom database analysis and modeling that Cornèr Banca uses to provide its customers with financial services and unique tailored offerings such as in the credit card business. Cornèr Banca calls this "360 Degree" banking.

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In the 1990s, Cornèr Banca introduced Unix servers to handle credit card authorization and other credit card-related functions (the key applications, as well as the communications hardware that it wanted to use, ran on Unix servers only). Backend credit card transaction processing, however, has always remained the domain of the mainframe.

From its inception, Cornèr Banca has always used mainframe architecture as the cornerstone of its information technology organization. The bank acknowledges that mainframe acquisition costs appear to be “high” — but also recognizes that a major part of the mainframe value proposition is unfailing reliability, unbreakable security, and a high degree of cross-the-environment integration.

The Pricing Discussion

To quote Charles Inches: “the System z clearly stands out on our balance sheet as compared with other system architectures — its one helluva bill! But considering that nothing ever goes wrong, the cost of mainframe architecture is well worth the price”.

According to Mr. Inches, Cornèr Banca has never had a show-stopping outage in its 40 year history with the IBM mainframe. This is not to say that Cornèr Banca has never had any issues or complications, however. For instance, recently, during a planned software upgrade the bank ran into a configuration problem and had to call IBM for help in resolving the issue. It took only a few hours to implement a workaround to the problem (the bank moved a CICS transaction handling environment into another mainframe Sysplex partition) — but the system never went down. “This happens so rarely” said Mr. Inches “that the systems administrators who handle Unix and Windows environments finally had a chance to watch their mainframe compatriots worry a little... IBM responded quickly to our problem” he continued “and provided an incomparable level of support. By joining forces with the IBM labs, we were able to overcome the problem quickly”.

This level of reliability underlies Cornèr Banca's willingness to pay a “premium” price for its mainframe architecture. Cornèr Banca does indeed see mainframes as expensive. But Cornèr Banca clearly recognizes the business and operational value of mainframe attributes such as integrated networking, the industry's highest security rating, and strengths in systems reliability, business continuity, and more.

A Watchful Eye on Driving Down Mainframe Computing Costs: The Use of zIIP Processors — and the Prospects for zAAP Processors

Standard System z9 processors are powerful, general workload processors. And because these processors handle so many different workloads simultaneously, IBM charges a premium price. IBM's zIIP, zAAP, and IFL (Integrated Facility for Linux) processors are used to process specific, specialized workloads — and are priced at discounted rates accordingly. Cornèr Banca recognizes that each processor type offers it the opportunity to reduce its cost of computing. At present, the bank uses zIIP processors to offload DB2 processing from centralized z9 CP's (central processors) — and is considering zAAP processors for Java workloads in the future.

Note: the use of specialty processors is a key IBM strategy for helping to reduce mainframe costs. IT buyers who have specialty Java, DB2, or Linux workloads would be wise to follow Cornèr Banca's example in order to help reduce mainframe acquisition costs.

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Ongoing Due Diligence Assessment

From a corporate culture perspective, Cornèr Banca constantly reevaluates its system technology and software options — and is always looking for the most efficient and reliable architecture on which to deploy its applications. One would expect no less from a company that is constantly weighing risks and rewards for its own customers.

Accordingly, Cornèr Banca recently assessed its entire information systems environment in an effort to determine whether its mainframe approach is the most cost effective approach for the bank's computing — or whether a shift to another architecture is warranted. As part of this assessment (that weighed not only acquisition costs, but also costs related to reliability and availability, as well as security and integration costs) Cornèr Banca was unable to answer the question (or solve the riddle) about “which server platform is the most economical”.

What Cornèr Banca concluded after closely examining its computing costs was that — even though mainframes appear to cost more from a cost of acquisition, software cost, and maintenance perspective — there is in fact very little difference between running a mainframe environment and a Unix environment from a cost perspective (when all features and functions are properly weighed into the equation). Cornèr Banca has known for quite some time, many mission-critical mainframe functions are bundled into the mainframe price — whereas Unix costs are frequently ala carte.

Cornèr Bancas analysis shows that both system types are on a cost par when advanced functionality, reliability, manageability, virtualization, and other enterprise-class functions are compared on an apples-to-apples basis.

The Move to Service-oriented Architecture

About a year ago, Cornèr Banca embarked on a “mainframe modernization” program. The bank started by assessing its application programming architecture, choosing between continued COBOL development, potential .NET development, and potential Java development. Cornèr Banca decided that in its multivendor, multiplatform environment, developing programs in the Java development language made the most sense. Java applications could then be run across its entire information system environment on mainframes, and on Unix and Windows servers.

The bank's next mainframe modernization decision involved unifying its Windows/-Unix/zOS environments under a common infrastructure. And in today's information systems world, the obvious choice for building a standard, multi-platform information systems infrastructure is to choose a “service-oriented architecture”. Service oriented architectures use a common systems bus (an enterprise system bus or ESB) for cross platform communications. Web services, a program-to-program communications standard, is also part of a service oriented architecture — Web services standards enable disparate programs to communicate with one-and-other using common program calls. XML (extensible markup language) is also used in many SOAs as a means for data to be shared amongst disparate databases and data structures. So, first, the bank made a strategic decision to move to a SOA infrastructure — and second, the bank had to make a choice of which SOA products to use.

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Moving to service-oriented architecture will help Cornèr Banca reduce software integration costs — and help the company share data more easily across disparate platforms — both are good things. Further, building applications in the Java programming language and writing those applications to a SOA infrastructure gives Cornèr Banca the option to easily move applications amongst platforms — and acquisition leverage with its vendor partners — another good thing. This leverage should not only result in better hardware/software acquisition options — but also in better products and better support (IBM will have to work hard to keep Cornèr Banca's business — a scenario that should work out well for both companies).

Why IBM WebSphere Was Chosen as the SOA Infrastructure Glue

BEA, Oracle, IBM, and dozens of other vendors offer turnkey, multi-vendor SOA infrastructure products. All provide ESBs, and all support Web services and XML. And because all of these vendors base their products on communications and networking, program-to-program, and data sharing standards, choosing between each SOA infrastructure offering can be difficult.

As Cornèr Banca weighed its SOA infrastructure choice, one major differentiator emerged. IBM's WebSphere (the product line that houses IBM's SOA offering amongst other software functions) offers a "binary compatibility" guarantee that Java programs that are written on other platforms will work on mainframes. So, for instance, Java programs can be written on less expensive PC platforms — and then deployed in production mode on mainframes (as it turns out, this is exactly what Cornèr Banca does). Because of this binary compatibility guarantee, Cornèr Banca chose to standardize on WebSphere across its entire information systems base.

Especially worthy of note about this decision is that the applications developed on the PC are being deployed on the Linux operating system that can now run on mainframes (illustrating how mainframes are not "old technology", but instead can run modern-day Java workloads). So, as Cornèr Banca continues along this development path, the bank will actually be able to drive its computing costs downward by using its mainframe not only as an advanced, high-speed, reliable, secure, energy efficient transaction processor — but also as an advanced, high-speed, reliable, secure, energy efficient application server environment!

It should not be overlooked that standardizing on Java and moving to a SOA infrastructure also gives Cornèr Banca a lot of flexibility on choosing which platforms applications should be deployed on. Should Unix someday, for some reason, become a better suited platform to address the needs of Cornèr Banca, moving applications from mainframes to other platforms certainly becomes an option. Having said this, Cornèr Banca emphasized that IBM's System z is its "strategic server of choice" — and the home for enterprise-class Java deployments.

By creating a common, standards-based program-to-program communications environment — and by standardizing on the Java programming language — Cornèr Banca can easily move code from one platform to another. This gives Cornèr Banca some leverage when it comes to negotiating hardware/software acquisition costs amongst its systems/software vendors.

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Are Skill Sets a Problem?

Last year, a well-known IT research and analysis firm alleged in one of its research notes that a major shortage of skilled IT mainframe professionals is imminent as older, “gray-haired” mainframe developers and managers retire... A follow-on, counter-report that *Clabby Analytics* published a research report that concurred that there is a shortage of mainframers — specifically Cobol programmers in certain geographies in certain market segments around the world. The most acute shortage of these individuals could be found in United States government organizations who are not allowed to outsource certain aspects of their IT environments. This *Clabby Analytics* report also pointed out that enterprises around the world are finding tons of COBOL development talent in India and China — *and that the skills shortage for these individuals pales in comparison to the worldwide shortage of .NET and J2EE (Java) programmers.*

When pressed as to whether finding mainframe talent is a problem in the Lugano area, Cornèr Banca's response was “not at all”. As Mr. Inches pointed out: “COBOL programmers do not need to be grown in a university — anyone with a logical mind can write COBOL programs”. And, as Mr. Inches proudly pointed out: “there is no shortage of people with logical minds in Lugano...”.

Mr. Inches then steered the conversation to his current SOA/Java initiative. He noted that one of the more interesting comparisons between his COBOL development staff and his Java development staff is that the COBOL people “understand the big picture. They know how business logic flows through an organization — and they understand how what they write impacts the overall systems environment and the organization in general. .NET and Java programmers” he pointed out, “by nature do not yet have the same level of understanding of how the business runs and operates as the COBOL developers do”. Further, he pointed out that visual Java application development is simple and straightforward in nature, so individuals skilled to a lesser depth are often used to write Java code. But he insisted that “for real-world, run-the-business and serve-the-customer code, his COBOL programmers are better skilled at figuring out the business logic and writing more highly specialized code than the typical Java programmer”.

When Cornèr Banca does need skilled professional assistance that is outside of its range of expertise, Cornèr Banca can turn to IBM Global Services for additional help. But Cornèr Banca has other options, including finding individual contractors or making use of the expertise provided by Primeur — an Italian systems integrator that has deep expertise in middleware for SOA, enterprise systems busses — and, best of all, deep mainframe expertise.

Other Notes: Energy Use

Also worthy of note is a side discussion with Mr. Inches regarding energy conservation. Mr. Inches indicated that powering and cooling his data center has not become a major issue — yet — in Lugano. He has access to the power that he needs, and he has recently installed modern cooling and uninterruptable power supply systems. So Cornèr Banca is in good shape (for now).

In order to prepare for the energy demands of tomorrow, the government of Switzerland is entertaining new proposals for nuclear-based power plants. Mr. Inches will be watching his government's energy plan quite closely over the next several years.

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Summary Observations

One of the biggest complaints registered amongst prospective IBM System z (mainframe) buyers is that System z hardware and software “cost too much”. Over the past few years, IBM has taken steps to lower its systems costs with the introduction of “starter system mainframes” (System z's priced in the \$100K range); with aggressive discount packaging (IBM's application partner SAP); with reduced cost specialty processors (that can significantly lower computing costs for Java/Linux workloads); and so on. But still, many IT (information technology) buyers believe that mainframe computing is still *too expensive*.

What many prospective mainframe customers fail to understand is that what they are being asked to buy is a highly-integrated, very reliable, very secure, all-inclusive computing environment — as opposed to the ala carte, piecemeal system/software offerings sometimes found in the Unix world, and almost always found in the x86 world. With System z mainframes, reliability, availability, security, systems management, virtualization, and more are “built-in” instead of packaged as separate add-on components. And, further, these components are horizontally and vertically integrated with one-and-other, so prospective buyers need not waste budget trying to integrate components when they buy a mainframe.

The way Clabby Analytics looks at it, Mercedes Benz does not apologize for its price. When you buy a Mercedes, you know you're buying a quality automobile. That it's reliable. It's safe. And it can last forever if well maintained. IBM's mainframe is the Mercedes Benz of the high-end computer market.

To ensure that Cornèr Banca has ultimate flexibility in the systems platforms that it chooses, Cornèr Banca has embarked on a plan to implement a service-oriented architecture that can enable applications to communicate across all of its servers — irrespective of whether those servers are running .NET or Java, Windows or Linux, Unix or zOS (the mainframe operating environment). From an application development perspective, Cornèr Banca is developing Java/Linux applications on Linux x86 servers and desktops, but testing, debugging, performing quality assurance, and deploying these applications in production mode on its mainframes. System z is Cornèr Banca's strategic application server of choice.

Finding mainframe skills locally does not appear to be a major problem for Cornèr Banca. Programmers (both COBOL and Java) can be found in Lugano itself — and higher level expertise is also available from a local systems integrator. The alleged skill set issue that another research firm has alluded to does, yet again, not appear to be a serious problem.

When all is said and done, Cornèr Banca is not “locked” into System z architecture. Cornèr Banca understands exactly what it is paying for when it buys a mainframe — an entire, reliable, secure, resilient environment that delivers excellent value for its cost. Accordingly, it is no mystery why the platform that makes the most sense to serve the majority of Cornèr Banca's computing needs is IBM's System z.

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