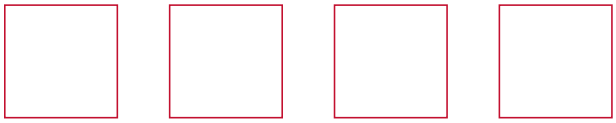
# Why Are CRM and Billing Systems Implementation Projects in the Telecommunications Industry So Prone to Failure?



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**OCTOBER 2008**

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# Abstract

This article studies the risks involved in the implementation of billing and CRM systems in the telecommunications industry. To do so, we have developed case studies on five carriers that have recently attempted to implement such systems resulting in either outright failures or lengthy delays, both resulting in costly overruns and negative business impact. The case studies led us to conclude that project failures are due to at least one of four factors: 1) intrinsic project complexity (such as attempting to implement billing and CRM systems within three carriers simultaneously), 2) limitations in the software platform (such as shortfalls in integration capabilities or abundant customization requirements), 3) project management shortfalls (including limited user involvement), and 4) lack of implementation capabilities (either in-house or within the systems integrator). As a conclusion, a number of recommendations are made to limit the influence of these variables and control for implementation risks.

## 1. INTRODUCTION

The management of telecommunications service providers is becoming increasingly complex. Multi-product line ups, pricing complexity, bundling, customer experience improvement, and ever shortening time to market are some of the challenges facing executives in the industry. In this context, investment in information technologies becomes non discretionary. They remain the necessary tools to address some of the issues mentioned above. However, mirroring the growing business complexity, information systems are themselves becoming increasingly difficult to manage. Thus, management faces a paradox: information technology is a necessary pre-requisite for a carrier to be a viable competitor, while its deployment and operation can be fraught with risks and become a hurdle. This leads to a situation where, across industries, less than 50% of executives appear to be fully satisfied that the business benefits of an application like CRM have met or exceeded their expectations[1].

This paper focuses on a particular aspect of this quandary: the risks involved in the implementation of billing and customer relationship management (CRM) systems in telecommunications companies. Because of their functionality (collect revenues and manage customer relationships), these two applications lie at the center of a carrier's systems architecture. As such, it is natural to expect that the complexity trends discussed above be reflected in their installation and operation. Their implementation requires multi-million dollar investment, and although the telecommunications industry is shying away from attempting to develop in-house applications, the customization of off-the-shelf packages remains a lengthy project, entailing a large amount of resources, both in-house and from systems integration houses.

We have studied the experience of telecommunications and content distribution carriers that have attempted and, in some cases, completed the cumbersome process of implementing a billing and/or a customer relationship management system. Given that our objective is to understand the risks of failure in such a process, we have selected five case studies that had to face costly failures. Our definition of failure is two-fold: the straight-forward one is canceling the project and decommissioning the system. This could result from a number of reasons: inability to overcome implementation complexity, limitations of the chosen software package, and lack of management commitment, or a combination of all three. The second option, that of mitigated failure, is the situation where the solution is successfully implemented, but after incurring a significant economic and schedule overrun.

Data on these five case studies was collected through a series of multiple interviews of executives of the IT and business functions. Given that our purpose was to focus on implementation risks and failures, our sample is biased toward carriers that have encountered problems in installing systems. Furthermore, since we are interested in understanding the influence of commercially available off-the-shelf solutions on implementation, all our cases entail the customization of packaged software. In order to determine whether there were any particular issues emerging in either a specific sector of the telecommunications industry or a single geography, we selected from the large number of failures a sample of companies across three segments[2]:

- A wireless telecommunications carrier in North America (13 million subscribers) implementation of a CRM system in 2004–6
- A satellite content distribution company in North America (12 million subscribers) imple-

[1] Bland, W. *Best Practices: Getting the most from your CRM deployment.* Forrester, July 24, 2007.

[2] Number of subscribers at the time of the events captured in case studies

mentation of a CRM system in 2004–7
- The Asia/Pacific operations of a global wireless service provider (4.5 million subscribers supported by three subsidiaries) implementation of a billing and CRM system in 2003–7
- A European wireline incumbent (35 million customers) implementation of a CRM system in 2007–8
- The wireless arm of a vertically integrated (wireline-wireless) service provider in Latin America (8.5 million subscribers) implementation of a CRM system in 2006–8

The article will start by reviewing the nature of the problems encountered by each company and will then analyze the reasons that resulted in such problems. Our assessment will cover four primary areas: 1) intrinsic project complexity, 2) limitations in the software platform, 3) project management shortfalls, and 4) lack of implementation capabilities (either in-house or within the systems integrator).

## 2. THE NATURE OF THE PROBLEM

As mentioned above, we have defined a failure as either the cancellation of a project after a substantial investment or the successful completion after realizing sizable economic or schedule overruns. Of the five companies studied, three were able to conclude the project and two decided to cancel it:

- The European wireline incumbent successfully implemented a Siebel CRM solution aimed at replacing a legacy platform, with the purpose of simplifying the systems architecture, and decoupling the BSS and OSS architectures to allow for rapid development and launch of new services. Originally envisioned to require 1.5 years and a budget of $ 135 million, the project demanded 2.2 years and $195 million investment. The carrier is in the process of completing the migration strategy and dealing with lingering issues, such as data integrity.
- The Asia/Pacific subsidiaries of a global wireless company tackled the simultaneous replacement of both their billing and customer care systems with Portal and Siebel[1] solutions respectively. The project was conceived as a template for the company to roll out on a worldwide basis. Originally budgeted at $200 million, the new platform was targeted to be installed initially in three subsidiaries and was expected to last 2.3 years. The final implementation timeline was 4.5 years instead of 2.3 and the total cost of the project around $ 450 million. The objective of having the billing system become a flagship for other subsidiaries was not fulfilled since other carriers decided to cancel the project mid-course.
- The Latin American wireless carrier tackled the replacement of an obsolete, highly customized non-scalable CRM platform with Siebel to support the call center and POS system, integrating care and sales. In addition, in order to leverage purchasing synergies, the wireline side of the business decided also to purchase the same platform. The wireless project was finally implemented and the carrier has now the capability of handling in-bound campaigns, conducting cross-selling pilots, and cleaning up the portfolio of delinquent subscribers. However, the project required 2.5 years rather than one originally estimated. On the wireline side, project delays resulted in the cancellation of the project, a financial settlement between the systems integration house and the carrier, and a loss of $2 million.
- The North American wireless carrier tackled the replacement of a legacy CRM application with a Siebel solution in order to support marketing and channel activities, as well as customer analysis. After approximately two years of implementation work and losses of approximately $ 80 million, the project was cancelled and the carrier continued relying on

[3] Both companies have been acquired by Oracle Systems.

the legacy application.

· The satellite content distribution company decided to replace a legacy CRM application with Siebel. The project was expected to last.

Figure 1 presents the outcome of the five cases being analyzed: 1.5 years at a total cost of $ 15 million. The project ended up requiring 3 years at a total cost of $ 50 million.

However, once the application was partially implemented, a combination of factors (management changes in the company, higher than usual software license fees, and potential scalability problems) led to the cancellation of the project and consequent decommission of the project.

**Figure 1. Outcome of five case studies**

| Company | Original Budget Time (Years) | Original Budget Cost ($M) | Actual Budget Time | Actual Budget Cost ($M) (*) | Final Outcome |
|---|---|---|---|---|---|
| Wireless Carrier (NA) | 1.0 | $ 25 | 2.0 | $ 80 (220%) | Decommissioned |
| Satellite Distribution (NA) | 1.5 | $ 15 | 3.0 | $ 50 (133%) | Decommissioned |
| Wireless Carrier (ASIA/PACIFIC) | 2.3 | $ 200 | 4.5 | $ 450 (125%) | Implemented |
| Wireline Carrier (EUR) | 1.5 | $ 135 | 2.2 | $ 195 (44%) | Implemented |
| Wireless/wireline Carrier (LATAM) | 1.0 | NA | 2.5 | NA | Implemented in wireless; cancelled in wireline |

*(*) Percentage indicates budget overrun.*

As the figure shows, the projects that led to a final cutover incurred cost overruns ranging between 44% and 133% and schedule extensions of 7 months to 2 years. On the other hand, cancellations were decided after a timeline extension of over a year, and a cost overrun exceeding 120 %. What was the business impact of all these problems?

### 3. IMPACT ON THE BUSINESS

In addition to the economic losses, the impact of the cancellations and delays varied by project. They can be categorized into two areas: technical and business impact. The technical impact (e.g. downtime, problems with data integrity) can be directly linked causally to the project itself. The business impact pertains more to the inference of a cause-effect between the delay or the cancellation of the project and business performance. The technical impact can be easily ascertained in the case of projects that were completed:

- In the case of the European wireline carrier, technical problems emerged at the cutover point. Originally, the carrier planned for a parallel transition where both systems would be running simultaneously for three months but finally decided against it because of the complexity it entailed. Around cut over time, the carrier did not have CRM support for one week, which meant that processing and provisioning turnaround time went significantly down. Even a month later, there was some unplanned downtime. While scalability and performance has been excellent since, the main problem right now is data integrity. Because of the initial downtime problems, the carrier allowed users to continue using the legacy applications, which perpetuated data inconsistencies. It is believed that these problems will continue to occur until the system is stabilized.
- In the case of the Asia/Pacific subsidiaries of the global wireless carrier, the first phase of the billing and care platform was released 18 months after project start-up. Some reliability problems were discovered in production, which were resolved over a 3 month period. The second phase of the project was due to start deployment 12 months later and be completed for all three subsidiaries 18 months later. It actually took a further 2.5 years for the first subsidiary and 3 years to finally complete the project. Part of the delay resulted from a decision to change the deployment approach and to upgrade the hardware and software technology in a separate deployment, thus lowering the risk in the business migration cutover. During the final cutover the system also did not have CRM support for one week. This meant customers could not check their account balances, set up their phones to roam overseas, add new connections, change plans or pay bills. To the carrier's credit, this service interruption was managed through a highly effective communications strategy that surprisingly showed an increase in customer satisfaction during the cutover period.

The business impact on all the cases studied was hypothesized along the following three dimensions: customer acquisition, churn and new service revenues *(see figure 2)*.

While it would be wrong to exclusively attribute these shortfalls in performance to the decommissioning or implementation delay of a billing and/or CRM application, it would be reasonable to assume that this factor played a contributing role in not allowing each of the carriers to improve their business metrics significantly on time.

**Figure 2. Type of outcome of five case studies**

| Case Study | Status | Customer Acquisition | Customer Churn | New Services |
|---|---|---|---|---|
| Wireless Carrier (ASIA/PACIFIC) | Implemented | The subsidiaries continued to perform at similar rates of growth during the project although the introduction of new services restricted growth over and above what had previously been achieved [4] | Churn Remained Stable | Unclear |
| Wireless/wireline Carrier (LATAM) | Implemented in wireless; cancelled in wireline | Carrier is worst performer in terms of share of net adds | Carrier remained worst performer in the industry | Unclear |
| Wireless Carrier (NA) | Decommissioned | Carrier dropped to distant third in terms of share of net adds | Carrier remained worst performer in the industry | Carrier's data share of ARPU stayed below industry average |
| Satellite Distribution (NA) | Decommissioned | Unclear | Unclear | Unclear |
| Wireline Carrier (EUR) | Implemented | Unclear | Unclear | Unclear |

## 4. WHAT WENT WRONG?

It is difficult to attribute a single factor during the problems encountered in any of these case studies. Each situation was generated by multiple reasons, which can be categorized around four areas:

- **Intrinsic project complexity**
- Platform limitations
- Project management shortfalls
- Limited implementation capabilities

a. Intrinsic project complexity: As mentioned above, implementation of a billing or a CRM application in a telecommunications carrier is an exceedingly complex project by definition. As one of the CEOs stated in the course of his interview, "an ERP implementation has a potential risk level between 4 and 5 out of 10, while CRM and billing have a risk between 8 and 9". Those executives with enough years of industry experience might remember the horror stories of carriers not being able to bill their customers for three months, resulting in a consequent revenue loss. In fact,

[1] This was largely due to the rating capability introduced in phase 1 of the project which offset the impact of inqbility to launch new services (the business was able to introduce new services only if they fitted the configuration models of the system). However, once the system was implemented, the improved functionality delivered significant benefits to the business with one of the subsidiaries gaining market share over its competitors.

replacing a telecommunications billing system is akin to implementing a Demand Deposit Accounting system in a bank.

It is remarkable, however, that all of the projects studied exhibited, in addition to their natural complexity, specific features that made them even more complicated:

- The project complexity at the European wireline incumbent was driven by multiple factors. First, the carrier's sheer size (over 30 million wireline subscribers, combined with 5,000 products). Second, the number of end users supported by the application (35,000, of which up to 20,000 accessed it concurrently). Third, the technical design comprised an abstract interface layer aimed at decoupling of the BSS and OSS layers. This middleware had not been developed before and had to be heavily customized to adapt to the carrier's business processes
- A lot of the complexity at the Asia/Pacific subsidiaries of the global wireless carrier was driven by the scope of replacing simultaneously the main transaction systems in three operators. As such, while the size of operations was relatively small (4.5 million subscribers), the requirements gathering phase was more complex insofar that it meant addressing needs from three different carriers. Furthermore, the complexity increased exponentially when the carriers had to define the data migration plan. In fact, the companies took one whole year longer than originally planned to define and test the migration strategy.
- Similarly, the project complexity at the Latin American carrier originated in the objective to simultaneously replace the CRM application both at the wireline and wireless businesses; this situation was magnified by reducing the implementation timeline beyond what was reasonable from a project standpoint
- In the case of the North American wireless carrier, the complexity was induced by the software vendor. In response to what could be labeled as commercial aggressiveness, the carrier purchased the entire CRM library without having a precise vision of what it intended to achieve with it. This put the carrier in a position to have to implement all modules simultaneously.

The obvious question that these facts raise is whether management at each of these carriers could have managed the implementation risk by limiting the additional features which raised the project intrinsic complexity.

**b. Platform limitations:** As mentioned above, all solutions chosen in the case studies were commercially off-the-shelf. However, they required significant customization. In all cases, problems were detected in the solution chosen which either contributed to the project complexity or significantly challenged the carrier's capacity to adapt it to meet its own requirements. The platform limitations were structured around four areas:

1) Cumbersome development tools: in the type of software under consideration, the availability of a state-of-the art set of tools is critical to improve programmer productivity. This did not seem to be the case in two of the cases studied. The European wireline carrier, for example, commented that the programmers' experienced considerable difficulty in performing configuration management and that it was close to impossible to manage more than three parallel development streams. Furthermore, their application lacked adequate load and performance test tools[5].

In a related comment, the North American wireless carrier considered that the front end development tools of the CRM software they were considering to install was extremely complex, thereby requiring a lot of programmer training[6].

[5] Vendor appears to have corrected this shortfall in a recent release.

2) Myth of "configurable software"**:** it is common that applications are being marketed by vendors as equipped with significant flexibility that enable easy adaptation to the carrier's specific business processes. However, it was found out in our case studies that "configurability" could lead to implementation complexity. Furthermore, "configurable software" was found to be, in at least two case studies, "a set of tool kits sold in conjunction with systems integration services"[7] and "more like a spreadsheet that requires significant amount of configuration and modification to perform any useful function"[8].

In the case of the Asia/Pacific subsidiaries of the global wireless carrier, the billing system required significant amount of configuration and modifications in order to be installed. In particular, the software needed numerous core functional enhancements to address the carrier's specific requirements for performing suspense management, revenue assurance, common CDR format, product catalogue, adjustments and disputes, and payments interface.

In the case of the Latin American wireless carrier, it was found that the CRM application (which was the same as the one referred to above) was quite general (almost a horizontal application that lacked applicability to the telecommunications industry)[9].

3) Myth of the "integrated software": module integration is a fundamental requirement in the systems architecture of telecommunications carriers[10]. A conventional feature between billing and CRM software, integration is now being tackled between the BSS and OSS[11]. The case study interviews indicate that integration in the packages purchased remains an elusive concept, ranging from non-existent to cumbersome.

The Asia/Pacific subsidiaries of the wireless carrier experienced a situation in which, while the billing and CRM systems were sold as modular systems that could be easily integrated by middleware, the latter remained undefined and there was no integration roadmap. Part of the problem was based on the fact that the vendor assumed that it could apply to a telecommunications carrier the integration roadmap originally developed for a financial services company. In fact, the complexity of telecommunications business processes resulted in a complete mismatch between the proposed middleware and the needed one[12]. On a related matter, the same carriers experienced integration problems between billing and OSS, leading to limited functionality in recovery for exceptions and errors in order management.

4) The scalability problem: in an industry whose subscriber base has been growing in the double digits for the past ten years, scalability is a critical concern. Scalability appeared to be a problem in

[6] The problems pointed out here are not uncommon. See Gliedman, C. *Oracle Siebel CRM leads in record-centric customer service management software* (May, 2007): ". . . applications complexity, high cost, a clunky user interface, and lengthy implementation schedules are drawbacks".

[7] North American wireless carrier.

[8] Asian subsidiaries of global wireless carrier.

[9] For example, in the original software, call center queries were associated with a name of subscriber rather than a line, which indicated that the platform was more intended to support retail markets. The software had to be modified by building a front-end portal that made a query look as one conducted within a telecommunications industry call center.

[10] See Katz, R. *Assessing TCO for Best-of-Suite versus Best-of-Breed in the communications service industry* (2007).

[11] See Katz, R. *Strategic vision of the evolution of OSS* (2007).

[12] Of the 65 business processes, the middleware supported three to a useable level, and only one fully.

most case studies both at the modular level and as a result of cumbersome module integration.

A typical case of scalability limitations at the module level was experienced by the North American satellite company. For example, in the case of the CRM software, the product catalog was found to be a tremendous drain on system resources. The system generated so many internal transactions requiring overhead that it resulted in structural scalability problems.

A problem of a similar nature was experienced by the Latin American wireless carrier. Although their software was a subsequent version of the same CRM platform which the satellite operator intended to install, scalability problems persisted. For example, a service request inquiry leading to the identification of "client owners", generated a comprehensive list of all "owners and collaborators" based on internal reference lists. This stressed applications performance, having impact on scalability.

At the integration level, some of the case studies identified problems between billing and OSS for order management. In this case, the integration between both systems resulted in a high volume of data transfers which also affected systems performance.

In a similar way, the North American satellite operator experienced numerous issues attempting to integrate the CRM platform with other applications. The system generated innumerable internal transactions requiring overhead which resulted in structural scalability problems. Unfortunately, the company's IT staff could not address them because in order to get around them, the original architecture on how the system deals with integration needed to be rethought completely.

**c. Project management shortfalls:** The case studies identified numerous areas where implementation problems could be attributed to project management problems. These issues are not specific to implementation of billing and CRM systems in the telecommunications industry. However, insofar that these factors were identified as key contributors to the failure in the North American Wireless CRM and the significant delays in the Asian wireless subsidiaries, they need to be reviewed.

While the Project Steering Committee in the North American wireless company was composed of senior functional representatives, systematic delegation of attendance to deputies resulted in the participation of people that were more junior and less familiar with the carrier's strategic requirements or the architectural understanding[13]. While participation by the user community in the Steering Committee of the Asian wireless subsidiaries was high, the participants were not very familiar with the specifics of the project, which impacted the quality of the decisions.

The lack of involvement of the business side of the North American wireless carrier was rooted in the passivity it exhibited throughout the project. For example, the marketing department was not focused on developing a CRM vision as to what were the strategic needs of a CRM. As a consequence, when the CRM project was scoped out, the business case was predicated on a number of highly speculative qualitative assumptions. Finally, a core contributor to the failure at the North American wireless carrier was that at the time the carrier launched the project, the CIO had an ethic of isolation from the business end users. This isolation was due to the fact that he had a view that business owners did not know what they wanted, and that, consequently, his role was to anticipate their requirements.

[13] In many cases, the business people involved in project tasks were very junior or were not the top talent (in other words, only the staff considered being less critical to end user functions were the people made available to the project).

Conversely, it is fair to mention that a conscious approach to include the end user community in all key decisions made in the course of the project was a key contributor to salvaging the projects at the European wireline carrier and the Latin American wireless company. It was at both companies that, at the urging of business owners, the IT function renegotiated agreements with the systems integrator and made sure that the commitment for delivery on the part of the outside vendor was made.[14]

**d. Limited implementation capabilities:** The correlate of project complexity in implementing CRM and billing systems at telecommunications carriers is that if the project does not have the appropriate set of human resources (technical and business), either in-house or provided by systems integrators, the risk of failure or significant delay increases. This could be increased exponentially if the product chosen has limited integration capabilities.

At the European wireline, the complexity derived from the need to develop middleware capable to abstract interface requirements was beyond the expertise of the original systems integration technical team . A similar situation occurred at the Latin American wireless carrier. In all cases, the solution was to force the systems integrator to improve the profile of the team and bring additional in-house IT staff that assumed the responsibility of key project steps that required in-depth knowledge of the business *(see figure 3)*.

Interestingly enough, in two of the projects that were completed after significant delays, the critical failure point was the integration layer. In the other one, integration was a concern from the start since the initial solution did not work. As a result, it was addressed mid-way and worked well.  For this last carrier, the major challenge remained the creation of the billing solution and data migration.

**Figure 3. Tasks assumed by in-house IT staff**

| Carrier | Project Tasks |
|---|---|
| European wireline carrier | • Management of the OSS integration (requirements definition, link up to product structure)<br>• Data migration, integration testing |
| Asia/Pacific wireless subsidiaries | • Requirements definition for numerous modules (revenue assurance, product catalogue, accounts receivable, etc.)<br>• Data migration (assisted by the systems integrator) |
| Latin American wireless | • Installation of middleware<br>• Customization of call center query tools |
| North American satellite | • Data migration<br>• End user training |

[14] This added a minimum of six months to the original project schedule.

**Figure 4. Primary areas contributing to the outcome studies**

| | Intrinsic project complexity | Platform limitations | Project management shortfalls | Limited implementation capabilities |
|---|---|---|---|---|
| Wireless Carrier (NA) | X | X | X | |
| Satellite Distribution (NA) | | X | | |
| Wireless Carrier (ASIA/PACIFIC) | X | X | X | |
| Wireless Carrier (EUR) | X | X | | X |
| Wireless/Wireline Carrier (LATAM) | X | X | | X |

At two of the carriers, the systems integration house either recognized or was forced to agree that they could not tackle the project complexity and an in-house IT team salvaged the project. At the other one, the systems integrator took responsibility for the integration layer after they were asked to strengthen the consulting team.

To sum up, each case study had more than one factor contributing to the outcome *(see figure 4)*.

## 5.CONCLUSION

The analysis of the five case studies is quite enlightening with regard to the reasons why complex billing and CRM systems projects in the telecommunications industry tend to fail. Some of the drivers are quite common and not necessarily specific to the industry. In fact, numerous best practices have already been codified to address issues such as limited user involvement, or faulty project governance.

Nevertheless, the studies identified a number of factors that are specific to the telecommunications industry. Carriers should particularly pay attention to the management of complexity limiting the scope of areas of systems renewal to be addressed simultaneously. Incremental implementation might be advisable in order to limit the complexity attached to whole transformation projects.

In addition, the selection of commercial off-the shelf packages needs to be tackled very carefully particularly when it comes to differentiating between the promise of integration and configurability and reality, or when assessing the true scalability capacity of an application. More specifically, the product integration capability (especially, its integration layer) has a tremendous impact on

the project's likelihood of success. Along these lines, the evaluation of product maturity is a critical assessment metric when selecting a commercial off-the-shelf package.

Finally, in order to avoid failure, carriers need to carefully define their approach for retaining the services of a service integrator. First and foremost, retain a single service provider that assumes full accountability for delivering results. Do not fragment across multiple integrators which results in the impossibility of designating a responsible party. Secondly, when selecting the integrator, make sure it is well versed in the product chosen and that it has a solid implementation track record. Third, when negotiating the contract, ensure that the integrator will staff the most experienced team in the engagement. Similarly, when determining the scope of services to be purchased from the systems integrator, opt for assigning end-to-end responsibility and accountability, ranging from requirements gathering to conversion.

# Appendices: Case Studies

# Case Study: North American Wireless Carrier Implementation of Siebel

**1. Project:** In 2004, the carrier decided to implement Siebel as a CRM system with three business objectives in mind: improve its share of net adds, reducing churn, and growing the data services share of total ARPU.

**2. Outcome:** After approximately two years of implementation work, the project was cancelled. Losses amounted to more than $80 million (of which $ 19 million was in capital costs). The carrier is still operating a heavily customized application for billing with a primary care interface that is a GUI to the billing system. The carrier still needs new functionality, primarily at the customer interface level.

**3. Reasons for failure:** The reasons for failure of the CRM project were multiple. We have categorized them in the following four areas: 1) shortfalls in project governance, 2) limited end user involvement, 3) lack of CRM business case, and 4) problems with CRM vendor and product.

*a) Shortfalls in project governance:* Failure in project governance materialized at several levels:

- While the Project Steering Committee was composed of senior representatives, systematic delegation of attendance to deputies resulted in the participation of people that were more junior and less familiar with the carrier's strategic requirements or the architectural understanding
- Opinions of people in non IT functions were discounted by the IT side
- In many cases, the business people involved in project tasks were very junior or were not the top talent (in other words, only the staff considered to be less critical to end user functions were the people made available to the project)
- The implicit alliance between the CRM vendor end the CIO resulted in the purchasing of unneeded modules

In this context, it was very difficult for any individual to stand up and raise the "uncomfortable" question: why are we doing this module? First, the CIO was leading the charge and he had the support of the COO. Second, an underestimation of the opinions and capabilities of internal staff permeated the company and resulted in trusting the vendor more than the insiders.

*b) Limited user involvement:* Another problem was the passivity deployed by the business side throughout the project. In this context, the IT side said that the vendor was going to deliver a proof of concept that the business people were supposed to approve. The problem was that this proof was much more developed than a conventional one. And, by then, it was too late to have any input. In fairness to the IT side, there was no vision coming from marketing as to what were the strategic needs of a CRM.

*c) CIO Isolated from the business side:* a core contributor to the failure was that at the time the carrier decided to replace the CRM, the CIO had an ethic of isolation from the business end users. This isolation was due to the fact that he developed a view that business owners did not know what they wanted, and that, consequently, his role was to anticipate.

An implicit collusion between the vendor pushing for unneeded extra-functionality and a siloed marketing function (which was not listening to end users) resulted in the company agreeing to implement unneeded modules and increasing project complexity.

*d) Problems with CRM Vendor and systems integrators:* From a product standpoint, two problems were identified:

- Difficulties of applications: the applications programming tools were extremely complex, for which they required extensive training on the part of the programmers to handle[15]. In that sense, the implementation was significantly more complex with extended timelines. In fact, according to the interviews, the carrier was misled in believing that Siebel was a product, when in fact it is a set of tool kits around which the ISV sells systems integration services.
- Systems integrators: All the systems integration work was outsourced but not to one vendor; it is estimated that there were 80 different contractors from approximately 20 different firms.

**4. Impact:** As expected, ongoing reliance on the legacy CRM application did not allow the carrier to significantly improve its performance regarding share of net adds, churn, and data services as a percent of total ARPU. While it would be wrong to attribute this performance to the lack of a state-of-the-art CRM application, it is reasonable to assume that this factor had some impact.

15. It is only under new releases that the applications front end has been improved in terms of its ease of use

# Case Study: Satellite Content Video Distributor Implementation of Siebel

**1. Project:** This satellite video distribution player (serving 12 million subscribers) decided to implement Siebel to replace an old legacy CRM application. The project was expected to last 1.5 years at a total cost of $15 million.

**2. Outcome:** After year of implementation, the project encountered enough trouble that put in doubt whether it could be implemented. At this point, the operator called a systems integrator to salvage the project. It took the systems integrator another 1.5 year to fix the application to the point where it could be deployed in 2000 desktops. Total cost at the time this was completed was $50 million.

However, at the time this was done there was a leadership change in the company. The new management did not want to pay license fees, which were estimated to be excessive. As a result, although the project was completed, the contract was cancelled, and the company reverted to a Java-based legacy application.

**3. Reasons for failure:**
The operator experienced similar types of problems in implementing Siebel as what was experienced at other carriers. The project experienced a huge list of technical issues (latency, ability to integrate) that had to do with the platform itself.

First, the system had intrinsic scalability issues that could not be tackled by the programming staff. According to interviewees, the software had a fairly arcane architecture which tends to generate a lot of "chatter" (where modules talk to each other generating useless messages). Software implementers cannot do anything to fine-tune this situation.

Furthermore, the operator experienced numerous issues integrating with other applications, which can be organized around two areas: capacity consumption and product catalog. In the first area, the system generated many internal transactions requiring overhead which resulted in structural scalability problems. For example, once a record got written, it sat on a server waiting for a validation from the other application, and that consumed overhead. The implementers at the satellite operator who were dealing with these issues could not address them because in order to get around them, the original system architecture needed to be rethought completely.

Similarly, the product catalog was a tremendous drain on resources, and could not integrate with other tools in marketing, which required a large number of permutations (equipment, offers)[16].

**4. Impact:**
Since the company decommissioned the application and returned to the legacy system, it is difficult to ascertain the business impact of not having implemented a state-of-the-art CRM. Nevertheless, the total loss in the project amounts to $ 50 million.

[16] Now, Siebel claims that the new releases have dealt with some of these issues: that the universal product catalog has solved the problem

# Case Study: Global Wireless Implementation of Portal and Siebel

**1. Project:** In 2003, three Asia/Pacific subsidiaries of a global carrier (serving 4.5 million subscribers) decided to tackle the replacement of their customer care and billing systems, selecting Portal and Siebel as the applications. The billing component of the project was supposed to be a template to be rolled out worldwide. Originally budgeted at $ 200 million, the new software was targeted to be rolled out initially in the three carriers, and was expected to last 2.3 years.

**2. Outcome:** The implementation timeline in the project was 4.5 years, and the total cost of the project was $ 450 million. Due to the long implementation timeline, the carriers needed to keep the legacy billing system unchanged to be able to transition its functionality, which limited the capability to launch new products.

The first version of the product was released in 2005 but it was inoperative. Subsequently, a much more reduced scope version was released but ran into problems such as incorrect billing and sometimes, inability to bill at all. The second phase of the project was due to start deployment 12 months later and be completed for all three subsidiaries 18 months later. It actually took a further 2.5 years for the first subsidiary and 3 years to finally complete the project. Part of the delay resulted from a decision to change the migration approach and to upgrade the hardware and software technology in a separate deployment thus lowering the risk in the business migration cutover. In fact, the companies took one whole year longer to define and test the migration strategy than originally planned. The final release was planned for November 2006, but it was rescheduled until May 2007. However, in June 2007 the system underwent an upgrade to address operational problems. During the final cutover of the system did not have CRM support for one week, which meant customers could not check their account balances, set up their phones to roam overseas, add new connections, change plans or pay bills. This service interruption was managed through a highly effective communications strategy that surprisingly showed an increase in customer satisfaction during the cutover period.

One of the key strategies for mitigating Portal risk was that five other subsidiaries were going to implement similar platforms (and in fact were ahead of the Asia/Pacific subsidiaries). All subsequently failed either because of migration issues, cost overruns and scalability problems, leaving the Asia/Pacific subsidiaries to find and fix all the underlying issues.

**3. Reasons for delays:** Reasons for delays were of three types: technical shortfalls, problems in project management, and project structural complexity.

*Technical shortfalls:*

- First and foremost, the product did not meet the specifications proclaimed during the selection stage. Management of the carriers considered that, at the time, neither Siebel CRM, nor the Portal post-paid billing systems were fully developed. As a result, the systems integrator had to deliver a number of billing modules (such as invoicing and trial billing) which were expected to be part of the off-the-shelf package
- Secondly, Portal and Siebel were not integrated, which increased the implementation complexity. They were presented as modular systems that could be integrated by middleware. However, the middleware remained undefined and both vendors did not have an

agreed mutual roadmap. This was aggravated by the fact that the business processes in the operating companies did not match the functionality of the modular architecture.

- Third, according to some interviewees, the Portal rater had limits to scale-up with the number of transactions generated by the postpaid subscribers. There also appeared to be a number of problems in order management (integration with OSS) which affected system performance.
- Fourth, Portal is a configurable solution which is quite poor functionally and represents high integration risks.
- Portal scalability needed to be fully tested and a number of design or implementation changes made to improve processes performance
- Scalability appeared to be a problem in the integration between Portal and Metasolv. From a functional standpoint, the integration between both platforms did not present a problem. However, there appeared to be a number of problems in order management which could affect system performance. The integration resulted in a lot of transfers of data between the packages which affected the performance of the order management package. Furthermore, Metasolv and Portal had problems dealing with the recovery process for exceptions and errors.

*Project management:* A primary issue identified in this area had to do with problems in project governance. While participation in the Project Steering Committee was high, a lot of their members were not familiar with the specifics of the project. As a result, decisions emerging from the Steering Committee, particularly in the area of risk mitigation strategy, were particularly weak.

*Project structural complexity:* A lot of the project complexity originated in the simultaneous replacement of major transaction systems in a carrier. This was compounded by the organizational challenges derived from conducting it simultaneously for three subsidiaries.

**4. Impact:** The carriers continued to perform at similar rates of growth during the project although no introduction of new services restricted growth over and above what had previously been achieved. The fact that the carriers could maintain performance was largely due to the improved rating capability introduced in phase 1 of the project. This offset the impact of no new services being introduced as the business was only able to introduce new services if they fitted the configuration models of the new system.

While the subsidiaries maintained their low churn, they lost some market share, and, more significantly, share of new adds (impact of no new services). After going live the improved functionality delivered significant benefits to the businesses with one of the subsidiaries gaining significant market share over its competitors.

# Case Study: European Wireline Implementation of Siebel

**1. Project:** In the past, this wireline carrier with over 30 million customers was operating a heavily customized, mainframe based, and non-scalable application. This situation led the company to consider its replacement with several objectives in mind. From the IT side, the objectives were to gain access to a more manageable, scalable application that would enable the simplification of the architecture (reduce the number of programs), stabilize the operations and be capable of running it in new hardware. From a business standpoint, the objectives were, in addition to gain access to a faster and user-friendly platform, to change the process architecture leading to a decoupling of the BSS and OSS architectures. This decoupling, enabled by a more abstract interface layer, would allow the carrier rapid introduction of new services.

To start with, the company launched a feasibility study that led to a tender, which resulted in the selection of Siebel to be implemented by a joint project of in-house staff and a systems integrator. Under the original contract with the systems integrator, the SI took responsibility for functional design and implementation of the application.

The project was structured into three phases:

- Move retail customers into Siebel platform (targeted for June 2007)
- Move business customers
- Integrate special products platforms, e.g. ISP-Tariffs (planned for 2009)

The project budget was 90 million Euros and it had to be completed in 1.5 years.

**2. Outcome:** The project ended up requiring 130 million Euros and 2.2 years to be completed. In addition to delays, the cutover was not without problems. Originally, the carrier planned for a parallel transition, where both systems would be running simultaneously for three months but finally decided against it because of the complexity. Around cut over time (in April of this year), the carrier did not have CRM support for one week, which meant that processing and provisioning turnaround went significantly down. Even in May, there was some unplanned downtime, although no problems occurred in June. While scalability and performance is currently excellent, the main problem right now is one of data integrity. Because of the initial downtime problems, the carrier allowed users to continue using the legacy applications. Because of this, data inconsistencies were perpetuated. It is believed that these problems will continue to occur until October.

Technically, the project has delivered the capabilities it promised. Several design teams have been able to map their product designs to the implemented model, so that no programming will be needed to process these products on the CRM platform.

**3. Reasons for delay:** The project began with the development of a functional design conducted by the systems integrator. To begin with, the SI abstracted the original legacy system design and added further functionality, as specified by the carrier. This was the first driver of problems insofar that the business complexity stretched the systems integrator expertise. In addition to the complexity, the reduced number of business engineers relative to the technical staff limited the systems integrator capability to understand the complexity of functional requirements. This was particularly apparent in the case of order management. This situation added a minimum of six months to the original project schedule.

# Case Study: Latin American Wireless Carrier Implementation of Siebel

**1. Project:** The CRM project at this wireless carrier serving at the time 8.5 million customers was conceived as a holistic replacement of the call center and POS legacy system with a Siebel platform, integrating care and sales. The project, launched in 2006, was structured in three phases:

- Quick wins: target uncovered areas of the business (campaigns, sales support)
- Call center and store support for pre paid
- Call center and store support for post paid

The project was expected to require one year to be completed.

**2. Outcome:** In the process of negotiating with the vendor, the fixed telephony side of the business decided to purchase the application as well in order to leverage purchasing synergies with the vendor. This introduced a level of complexity delaying project launch because of the complexities of signing with two organizations.

The project was finally kicked off in December 2005. In March 2006, the wireless business, realizing that the deadline was going to be missed, presented a recommendation for an extension. The project on the wireless side was completed in 2.5 years.

In May 2006, the fixed telephony side of the carrier realized also that the deadline was not going to be met. However, in October the wireline business decided to cancel the project. The lost resources to the wireline side have not been fully quantified, but the carrier lost approximately US$ 2 million between systems integration fees, licenses, and unused hardware.

**3. Reasons for delay:** A primary reason for the delay in completing the wireless project resulted from the imposition of what was considered to be from the start an ambitious timeline. When this was recognized, the problem was dealt with by negotiating a new schedule with the systems integrator and actively communicating with the end users[17].

From a structural standpoint, the application chosen required some important modifications which had an impact on the project timeline. For example, while Siebel was selected because it was perceived to be more complete, flexible and tailored to the telecommunications industry, it was found to be quite general (almost a horizontal application). For example, in running a call center query, the customer record is associated with name of subscriber and not with a line. This required the carrier to design a front end portal that allowed linking a specific line to customer information.

From a performance standpoint, the Siebel platform did not present major problems. However, two issues that required fine-tuning:

- Query of new line/customer
- Treatment of business units “owners” when running a customer query. It was found that Siebel had a difficulty to handle “client owners” for service requests and other account queries. In those cases, the application assigns owners based on internal reference lists of “client owners and collaborators”, which trigger extensive searches, thereby requiring some performance fine-tuning

From a functionality standpoint, Siebel was found to be quite complete. However, there were cases where it was found to lack the flexibility to adapt

17 The wireline business did not do that. They immediately put pressure on the systems integrator, which led to the confrontation.

to the carrier internal business processes[18].

In another area where Siebel was found to have limited functionality was on the analytic side of the CRM. Here, the carrier's evaluation concluded that SAS was a better equipped product. In particular, SAS was found to be more scalable, possessed better campaign management tools, and had more advanced tools for predictive churn management than Siebel. Unfortunately, choosing a best-of-breed approach resulted in additional integration work.

Having said that, Siebel was found to be quite flexible to integrate with other call center platforms like Avaya and Genesys. For billing integration, the ease of integration with Portal, resulted in the carrier selecting that application as replacement of the current LHS legacy[19].

**4. Impact:** As a result of the failure to implement in the wireline business, the carrier could not implement a CRM replacement, thereby delaying the launch of convergent products. From the wireless side, the substantial delays had an impact on addressing a couple of business shortfalls. Churn at the carrier continues to be the worst in the industry, while the carrier share of net adds is also the lowest. While not all the blame can be attributed to the delays in implementing the CRM, the fact that customer conversions were completed late limited the potential positive effect that a fully implemented system might have had. Having said that, the carrier finally has the capability of handling in-bound campaigns; they have conducted cross-selling pilots and have been able to conduct a substantial clean-up of delinquent subscribers. On the other hand, since priorities emphasized front-office functionality, the analytic side of the CRM is substantially delayed. After 2.5 years of implementation, the wireless business is still relying on legacy tools (Enterprise Guide, SAS- based excel extract files, Cube) in the data warehouse, while the information is still not concentrated and integrated in a single repository.

18. For example, in the case of running credit approvals, Siebel has an escalation process which is not based on amount of the approval. Some companies solve this problem through a business process that supports that requirement. At the carrier, management would have liked that process to be automated, so when an inquiry comes for approval based on amounts, a set of inquiries are triggered automatically to right decision making entities.

19 Having said that, in order to integrate Portal and Siebel, personal installed WebLogic as middleware.

# About the Author

**RAUL KATZ** is President of Telecom Advisory Services LLC. With over twenty-five years of experience in the communications industry, Dr. Katz has advised senior management of carriers in Europe, North America, Latin America and Asia. He retired from Booz Allen Hamilton, where he was a Lead Partner of the Telecommunications Practice in North and South America and also served as CEO of Adventis, a global communications consulting company. Dr. Katz frequently addresses industry conferences and teaches Strategy for High Technology Firms at Columbia Business School. He holds two undergraduate degrees, a Master in Political Science, another one in Communications from the University of Paris, as well as a Ph.D. in Management Science and Political Science and an M.S. in Communications Technology and Policy from MIT.

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