



Importance of Business Analysis in Development and Implementation of Court Systems

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Knowledgeable business analysts play a key role in development and implementation of new systems or in acquisition of case management software. Skilled business analysts work at understanding the end-user group, the legacy and target system or systems, and the court environment and business processes.

Prior to developing the Common Pleas Case Management System (CPCMS), a centralized case management system for 67 counties, the Administrative Office of Pennsylvania Courts (AOPC) had used business analysis on projects, primarily during system development and redesign. Analysts were used for gathering requirements in Joint Application Design (JAD) sessions and for participating in high-level design and testing activities. Frequently, trainers visited counties and obtained additional information about how individuals did their work. The number of analysts on staff was relatively small in proportion to other staff roles.

During CPCMS development, the primary requirements and scope of

the system was established in user JAD sessions held at the AOPC offices. The system was tested and implemented in functional builds and went through user testing, also at AOPC. Various counties participated in user tests. The system was designed for use primarily by Criminal Court Administration, the Clerk or filing office, finance and collections, and by chambers. Other users varied by county, but sometimes included the District Attorney's Office, probation, and others.

Prior to developing the system, it was recognized that the 67 counties in Pennsylvania varied greatly in their business practices. In addition, the clerk's offices maintained a greater level of autonomy in developing local practices than did other court offices for which AOPC had developed systems. Because of these varied business practices, the design of CPCMS provided a high degree of table-driven, county-specific customization. In our development of integrated case management systems, AOPC has found that some customization by the court and county provides for

better user satisfaction. Our CPCMS system provides for varying the text of docket entries, for example. The docket entries are then linked to a generic case event value that allows docket entries to drive system processes. Allowing counties to vary text docket entries, case calendar entries, and various other application parts, allows counties to have a better sense of system ownership, which lessens standard business process system implementation.

A schedule to roll out the system was prepared, and counties were systematically trained and migrated to the system. Prior to county data migration, each county was provided with a set of customization worksheets to complete prior to “go-live.” County staff was visited by an AOPC analyst to assist in performing customization tasks. In some cases, a standard set of customized values was provided at the time of go-live.

As counties began to go live on the system, it was clear that a centralized criminal system would provide statewide agencies with a hub for criminal court information that was badly needed. But because of the variability in business practice among the counties, several issues were recognized that were hampering the success of the project. These included change management, business customization, and new application design issues.

An increased number of business/system analysts were brought onto the project to address

these issues. Analysts were assigned to work with specific counties, starting several months prior to each county’s go-live date. They spent two to four days in each county with the option to return for several more days if needed, meeting with each office supervisor and observing day-to-day user work. The analysts assigned to the project had court background, sound system knowledge, and technical skills as well as the ability to work successfully with users. They assisted in communicating county needs with technical staff and project management at AOPC.

A business analyst prepared a profile document for each county. The document provided detailed information to prepare for training. It covered users, business practices, and details of any issues and their resolutions. This provided a means to resolve the majority of outstanding issues prior to the go-live date. The profile document was compiled through visits to individual offices involved in the county system implementation. The final document was based on a standard template and set of problem areas that were reviewed with the individual county.

The major problem areas are described below along with the manner in which the analyst worked with the counties:

Change Management—Counties that went live early in the rollout were unprepared for change. There were many areas requiring active change

management when the system was implemented.

Integration and Communication—

Often, there were county business practices that needed to change because they would be impractical after system implementation. For example, the system was designed to allow Court Administrators to schedule cases for court. Clerk staff could then use this information to record dispositions, sentences, and other information that occurred in court. When Court Administrators and Clerks were not accustomed to working together and coordinating efforts, problems with this aspect of the system occurred.

Analysts were able to identify needed business practice changes and act as facilitators to help various county offices communicate and understand system implications of decisions. In general, analysts are skilled and trained to ask direct and open ended questions that elicit unusual practices, which will affect and/or impede use of a new system or identify individual or group resistance or hesitation, which will need to be addressed during the implementation process. Many counties set up panels representing various offices—including their analyst and AOPC staff members—to deal with change management.

Statutory and Rules Compliance—

Some counties had practices in place that may have unknowingly caused violation of statutes governing court functions and court procedural rules. Since the system

enforced compliance, county business practices had to be changed.

Analysts were able to assist in identifying frequent business practices in counties that violated statutes or court rules and develop questions for counties based upon prior experience. The analysts were then able to work with counties to develop alternative business practices.

Narrow Functional Roles—

Many offices had highly segmented job functions that became impractical with the advent of a more complex case management system. For example in the past, many offices had a single person enter dispositions while another person may have entered sentences. Because the system required that a disposition is entered prior to a sentence (so it could accurately reflect the relationship between the two) and because it could handle more than one disposition and sentencing pair, there was a timing dependency. It became more practical in most offices for a single individual to record both the disposition and sentence.

Analysts spent several days on-site looking closely at job functions within each office. They were able to work with trainers to define what users should be trained on for each aspect of the system. They also assisted in identifying where there would be training and functional issues and were able to advise county

managers of the issues so they could consider changes.

Involvement in Migration Review–

Data was migrated from legacy systems to CPCMS. Sixty-six counties had legacy information to be migrated. Early on, counties participated in mapping and establishing migration rules. They were also asked to review legacy data to determine whether or not there were migration issues. Early in the project, many counties did not grasp the impact of the migration process.

Analysts were able to assist in migration review, gaining detailed technical knowledge of county legacy data. They also reviewed migration mapping and rules documents. Since the analysts were more technical than county staff, they were able to better grasp migration implications. In addition, analysts had a close relationship with county staff and were able to emphasize the importance of county review. During implementation of CPCMS, counties come to rely on analysts to answer questions and address issues. Assigned analysts provided continuity to the county. Analysts visited the counties to assist with the go-live during the first week of implementation and assisted in addressing business process or migration issues that occurred after implementation.

Business System Customization–

While the initial counties completed the necessary customization, it became clear that they did not

understand the implications of their choices as they moved into go-live. The reasons for this were many:

System Context–In the first counties that went live on the system, the analyst who visited counties to assist in customization showed users prints of screens where customizations would apply. However, users did not get a clear context for their customization choices, and many changes had to be made at the time of go-live.

Analysts who spent longer periods in the county and who communicated with the counties more frequently were in a better position to define and re-define customization options to users in terms they could understand because they had taken time to understand the underlying business process within the county. Many analysts performed on-site demonstrations of individual parts of the system several times. They developed lists of frequent customization issues to pursue with counties. They were also able to provide a deeper level of customization, even to the point of mapping existing legacy docket entries to the new ones provided in CPCMS. This lessened the need for rapid customizations immediately upon go-live. In addition, analysts were present on-site during go-live to provide for needed customizations that were identified. Because they had the skills to maintain table values, including SQL and the ability to use remote access, needed changes were made relatively quickly.

Communication Between County Offices—Since the system was to be used by multiple offices within the county, it was not always clear initially who should make decisions about customization. Often the deputy court administrator was tasked with providing the final list of customizations to AOPC, with limited success.

By going to each office, analysts were better able to identify which office or offices would actually use the data where customization was possible. They were also better able to ensure each office reviewed the information provided by other offices. In addition, their interaction encouraged user group meetings at the county level to make customization decisions.

Implications of Choices—Since the counties had no prior experience with the system, they had no frame of reference for understanding the consequences of their choices.

In working with many counties through the go-live process, analysts were able to define advantages and disadvantages of customization choices.

Custom Development and Enhancement Specification—Each county presented a different challenge for system development and maintenance—whether it might be a specialized report that was unique to the court’s functioning or a minor modification to a screen. Larger counties presented more

problems than small counties in this respect.

Analysts were able to identify specific application or form and report functionality that counties really needed in order to successfully implement the system. Because they understood the business process, they acted as user advocates in the design process and assisted database and GUI designers in interpreting the stated requirements. In addition, they played key roles in development and execution of structured testing plans. Analysts provided a level of testing beyond the developers and provided test case data that is essential for moving into the end-user testing.

Court Context

The Administrative Office of Pennsylvania Courts Judicial Automation department has been responsible for development of case management systems for Magisterial District Judges, the Court of Common Pleas Criminal Division, and the Pennsylvania Appellate Courts—Supreme, Superior and Commonwealth Courts. This office has also been responsible for development of software for the Pennsylvania Board of Law Examiners (PABLE) and for internal administrative services and human resource tracking. These systems also include web interfaces for District Attorney Production of Information, on-line bar applications, warrant tracking for arresting agencies and other secure users,

on-line secure and public docket sheets for appellate and criminal cases, a scheduling interface for the Court of Common Pleas Criminal Division, among others.

Judicial Automation at the AOPC employs a full development staff. Throughout 15 years of developing software packages, beginning with the Magisterial District Justice (MDJ) System, AOPC has refined a repeatable process for software development, enhancement, and acquisition that involves an iterative lifecycle, joint application development (JAD) with user groups, screen prototyping, cross-disciplinary software development teams, and structured testing.

The role of business analysts in case management software development and implementation has become increasingly more important at AOPC as our software has become more complex and our process has matured.

Tips for Implementation

Tip 1: Identify the skills needed by business analysts. Business analysts need both business and technical knowledge because they serve as a critical bridge between end-users and developers. They need to be able to thoroughly understand the system that will be implemented in order to identify any issues that courts will encounter. Skills in relational databases, SQL, structured analysis and testing are desirable. They need to have excellent written and oral

communication skills as well as presentation skills. They must be active listeners to be able to understand the user process.

Tip 2: Knowledge of Courts–A unique challenge. Analysts with knowledge of other business systems have difficulty transferring this to court systems. Court case management systems are very different from inventory, human resource, or other common business systems. Analysts must be provided with opportunities to interact directly in court environments. The time necessary to become effective in this role is greater than in many other positions within our software projects.

Tip 3: Use Structured Analysis Techniques. The software development industry has provided various structured methodologies for performing analysis. The most important lesson these provide is that a systematic approach to collecting, organizing, and analyzing information is needed. Without structure, the analyst's thoughts and ideas cannot be adequately reviewed and refined. The "method" that is used is less important than the quality of analysis, attention to detail, and the process of review.

Tip 4: Provide Templates and Standardized Approaches. Templates help to standardize work products and provide analysts the ability to better understand what is being asked of them. They also help to build a repeatable process.

Tip 5: Provide the Same Information to End-Users in Varied Formats to Clarify Requirements and Promote Thorough Review.

Users need to view the same information in different formats. Remember that there are visual and verbal users. Some users do better with a slide show and some do better with a spreadsheet. Your project team needs to be flexible in this respect. This will provide a greater degree of clarity for uncertain requirements.

Tip 6: Provide Continued Training and Business Exposure for Analysts.

It is important that analysts have continued contact with the user community and advance in their technical training. Additional exposure and training are well worth the investment in reducing rework and providing efficient ways for analysts to meet user needs.

Tip 7: Assist Courts with Change Management.

Though change is never easy, it is better to actively assist courts with change management than to let them do this entirely on their own. Encourage courts to develop a partnership with the case management project group through frequent communication. Assist counties in setting up change management teams within the county. Assigning an analyst to a county helps facilitate the communication needed to manage change.

Summary

Business analysts are an important part of the software project lifecycle. An emphasis on their participation in software activities, change management, and court system customization can lead to great project success and system acceptance.

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