REWIRING THE

mega-city
How do a city the size of Toronto and its surrounding municipalities get on the same page? By getting on the same screen. Here’s how technology can help the new mega-city prevent mega-problems.

By order of the government of the Province of Ontario, the seven municipalities which previously comprised Metropolitan Toronto were amalgamated on January 1, 1998, to become the new, unified City of Toronto with an area of approximately 1,000 km² and a population of more than 2.5 million. At the same time, each of the discrete boards of education, library boards, public utility commissions, and other agencies, boards, and commissions were themselves amalgamated. More than 50,000 municipal employees were affected. The combined annual budget for the new City exceeds that of most of the provinces in Canada and even that of some small countries. Information technology (IT) will be required to link functions, services, and staff across all of the former jurisdictions and each of the discrete activities of the new City.

Amalgamation provides some challenging opportunities for planners and IT specialists. The urgent need to consolidate, harmonize, and standardize the way planners do business, combined with potential economies of scale, positions IT as an important—if not critical—part of the solution. Staff will be able to combine innovative ideas and technologies in their search for new and better ways to do business. This article discusses how planners intend to use IT to help achieve unity, efficiency, and convenience in the new City.

The existing situation
Prior to amalgamation, the former municipalities were separate corporations with unique organizational structures, corporate cultures, and physical and demographic characteristics. Each had their own official plan, zoning by-laws, procedures, and policies with respect to services provided to the public. They also had their own standard practices with respect to strategic planning, community planning, plan examination, inspection, and development approval paths. The Regional Municipality of Metropolitan Toronto, in its upper-tier role, examined recommendations from the lower-tier municipalities, provided general oversight, and quite often imposed a different perspective on what was good for the City. The new City will combine regional and local planning roles in a single-tiered entity that will apply a common and consistent approach to planning-related activities and processes.

From a systems perspective, the way that things were done in each of the former municipalities was certainly different. A survey of planning information systems found that there were at least 27 different systems in use across the various jurisdictions to support permitting and application tracking alone. They ran on different platforms and operating systems, none
"talked" to each other, several were not Year 2000 compliant, and most would have to be fixed or replaced as soon as possible. While similar between municipalities, the status of data captured to support planning processes is not identical, making conversion to new, more uniform systems a significant undertaking. In the short term, interim business rules have been developed by working teams to guide operations, but longer-term best practices have yet to be developed.

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**IT as a catalyst in change**

It is the objective of the new City to relate to each individual in the manner and at the level which he or she expects. Some of these people will require attention in person, at all hours of the day, and in languages other than English. Today, service at barrier-free public counters in Toronto is provided in virtually any language spoken, written, or signed. Literature is published and public service videos are produced in the dozen most common languages.

There is no such thing as a "technological imperative"; it is not necessary to introduce technology simply because it exists. It is a fallacy that IT was created merely to automate existing processes or to increase efficiency. We want to make planning in Toronto a positive experience for both our clientele and our planners. There will always be two moving targets—technology and the practice of planning—and it will be very difficult to separate one from the other in estimating effectiveness.

Many clientele, however, feel that self-service or high technology is the only efficient use of their time. In 1997, in those Toronto-area cities in which it was available, 75% of all recreation program registrations were done through automated phone systems or by fax, with the remainder being sent in by mail. Only a handful of people completed registrations in person. IT can and will help us to improve the way we conduct our day-to-day business. Access Toronto, the City's new electronic window to the public, will increase accessibility and improve service delivery through 24-hour, one-stop shopping using Integrated Voice Response (IVR), multilingual Web-based access, and public counter and shopping centre kiosks employing touch-screen technologies. Current, accurate, and complete official plan designations and zoning by-laws, for example, could be made available through any of these mechanisms. So far, Toronto's Web site has been a fairly standard information dispersal venue, but it will become a real workhorse over the next few years.

The approval process can be streamlined by electronically passing applications from one step to the next. Planners doing research or background checks will be able to easily access a wide range of data and information from corporate databases. Plans, images, digital video, audio recordings, or any text documents related to a project would be captured from the application process or from field inspection reports utilizing sophisticated document management tools and then electronically distributed. A case management approach can become practical reality. Ideally, all activity related to a proposed development will be handled as a single project instead of as a series of applications. Executive Information Systems will provide up-to-date status reports on all departmental projects, as well as a corporate overview.

Today—and perhaps forever—some of our clientele will come to the Building Permit counter with a proposed addition to their garage sketched on the back of an envelope, which we will accept as part of their application. However, just as all insurance companies now do as a matter of course, we will likely start scanning such material at the counter. Surveyors, engineers, architects, landscape architects, and even planners increasingly use computer-aided design (CAD) or geographic information systems (GISs) as part of their day-to-day business. They prefer handing in a diskette or filing drawings and supporting material electronically to making dozens of copies of large sets of construction documents. We cannot afford not to relate to this community in the manner in which they expect. Electronic submissions allow for the possibility of electronic circulation, which can greatly shorten the time required to complete the approval process.

Amalgamation will enable us to pool technology, ideas, and imagination into a creative synergy. Exciting new 3-D CAD and GIS technologies will be used by planners and designers to visualize, analyze, test, and communicate concepts and plans to constituents in ways never before possible.

**Technology issues in amalgamation**

With the very unusual advantage of having to start all over again, the City is creating an information-centred rather than a technology-centred approach to its computer use. Data will be actively stored for multipurpose retrieval and analysis by all departments, including Urban Planning...
and Development Services (UPDS). It may be ambitious, but there will never be another opportunity. All users will be represented, and the project will proceed.

The world is terrified of what will happen to computers in the year 2000. The City of Toronto has already announced a massive attack on the problem, with permanent staff being assigned to sophisticated hit teams in each of the key departments. The biggest problems are systems on older, mainframe computers, such as the urban planning and development systems. Since a common technique for solving this difficulty is complete replacement of systems, UPDS has had several of its new systems ranked very highly on a very exclusive list.

An Integrated Business Management System (IBMS) is being introduced as a comprehensive mechanism to integrate and streamline the business activities of UPDS. IBMS will introduce and reinforce a best practice approach that can be consistently applied throughout the new department. It will track the status of applications for both planning and building activities, as well as the activities of planners, analysts, examiners, and inspectors, while automating many of the tasks normally performed in the planning department. The selection process for this system was underway at the printing of this article, and implementation is scheduled to begin in the latter half of 1998.

Using technology to change municipal planning practices requires much more than imagination and political will. It also requires a solid technology infrastructure coupled with careful planning to ensure inter- and intra-departmental integration. The new City of Toronto is a massive organization, physically scattered across a huge jurisdiction. IT can provide a "virtual link" which enables planners no longer together in the same physical location to connect and collaborate. IT will permit consolidation and balancing of line operations in different geographic areas (such as redistricting planning, inspection, or administration areas) and rationalization of service points based on overlapping catchment areas for recreation facilities, fire halls, service yards, or libraries. It is expected that technology will allow distribution of the same services to separated locations (such as local public counters that accept requests or documents for other geographic areas) and common virtual access through the Internet or public kiosks.

This virtual connection can only be implemented through a partnership between individual business units and a corporate Information and Technology unit. IT must provide support and guidance to the business units of the City, as well as bring line staff and technical resources together to ensure that new business solutions are well integrated and conform to a common corporate standard. Technology standards will be easier to achieve simply because we will be adopting one way of doing things. A common, high-speed network will enable us to establish virtual linkages across and throughout the entire municipality. We will need to develop a common data library, especially geographic data, that is constantly and consistently maintained between departments and readily available to anyone who requires it.

As the world becomes increasingly tolerant of computers, and as personal computers become ubiquitous, people feel more confident in their ability to handle minor problems by themselves, by asking their coworkers, or more commonly, by asking their children. Software is becoming more standard and more intuitive.

Implementation strategies

Delay in implementation, especially when business units are large and self-contained, increases the potential for "siloing." Faced with an overwhelming need to get their department in order as quickly as possible, departments may want to head off and do...
their own thing in an effort to deal with specific and immediate business needs. Planning is no exception. Siloing can lead to a lack of standards, poor data sharing practices, poorly linked business processes, redundancy of data, and duplication of effort. Thus, it is important to provide a phased implementation approach that builds on well-integrated modules. And any strategy must also be flexible and adaptable to evolving business and organizational needs.

Individual departments throughout the corporation are still in flux, with most guidelines and procedures yet to be ironed out. As a result, the ultimate IT solution may take several years to implement. Despite this, and severe limitations to IT funding and staffing resources, there remains a need to do some things right away to ensure that core services are provided with reasonable consistency. In the short term, it is important to institute quick fixes that provide some improvement and consistency with a minimum of time, effort, resources, and disruption. In the long term, the City must incorporate best business practices supported by the most appropriate technology for each situation.

Every department has its own short-list of immediate projects, and GIS features in most of them. The rapid implementation of an enterprise-wide GIS capability that will provide departments with a uniform set of spatial data products that can be embedded in business applications is a leading corporate priority. Since good topographic data exist for the entire city in a fairly uniform format, the first major GIS initiative is to create and implement a maintenance mechanism for a continuous electronic map of those parcels of land representing assessment roll numbers. This system will be ready by the end of 1998, and it will be linked to non-spatial data that can be used by planners. There will be no single GIS tool, but there will be one accepted source of common data.

**Partnerships**

Our most important partnerships will be among our own staff. Data sharing and system integration is not a technical exercise, but rather a social one. It is people who must share their hoarded resources or depend on others to provide them with the tools to do their own jobs. It is not computers that do the work or come up with the ideas, it is professional staff. There will always be doubts regarding the introduction of a new technology, not only because of the technology itself, but also because of a sense of insecurity inherent in massive change. It will be the job of technical staff and system integrators to perform the social work needed to create these partnerships.

Financial pressures brought on by downloading and reduced budgets are forcing us to look beyond our immediate organizations to come up with innovative solutions. However, we are not the only ones faced with these challenges, and opportunities exist for “win-win” solutions. For example, UPDS collects structural, land use, and zoning information that is also needed to support the new Ontario Provincial Assessment Commission (OPAC). Establishing a partnership with OPAC would distribute our development costs, ensure that current and accurate data can be shared or exchanged, and save time and money for both organizations. The City can also partner with other third party groups to exchange or maintain data.

**Conclusions**

Municipalities are, at their core, providers of the physical and social infrastructure which allows individuals in our communities to live, work, and play in health, safety, and comfort. The judicious implementation of corporate information technologies will help us to meet this objective. The corporate Information and Technology group, by creating an enterprise-wide environment, will bind the disparate units that are the City. The City will seize the opportunity to develop business applications linked to enterprise-wide databases with embedded GIS capabilities. By sharing data across jurisdictions, professions, and departments, spatially enabled business applications will ensure that data remain accurate, current, and readily available.

Based on our own limited experience, the biggest challenge in amalgamation is the sheer size of the organization and the speed with which it can respond and adapt to change. Some will argue that we are changing too quickly, while others insist that we are not moving quickly enough. It's a delicate balancing act. The immense complexity of joining tens of thousands of individuals scattered in over 1,000 physical locations, forcing seven completely different bureaucratic structures into something unlike any one of them, dismantling former working units to create new teams, and reducing the total number of employees—combined with the necessity of continuing day-to-day operations as if the amalgamation had not occurred—is difficult, to say the least.

An amalgamation of this scale may never happen again in Canada. But if it does, we recommend early and proactive introduction of corporate IT solutions, such as sharable and shared data sets, a ubiquitous high-speed network, automated processes, good points of access, and above all, a workforce capable of implementing and willing to take advantage of such systems.

Information technology can only support the collective and individual wishes of staff and management in their day-to-day activities. People must provide the leadership, communication, imagination, and desire to explore new and better ways of doing things. Solutions will emerge through the synergy of a collective talent pool. Done properly, amalgamation can encourage different perspectives and use the best elements of each former corporate culture to come up with more effective ways of doing things.

We are working from a clean slate with an exciting but very challenging opportunity for a fresh start. Technology can act as a catalyst and enabler, but it will
have to be introduced carefully. We must proceed with a gradual, phased, modular implementation using quick hits that minimize risk. Trying to do everything at once and failing is a recipe for disaster, as bad if not worse than doing nothing at all. As we take on this challenge, we hope that planners in the new City will have both the opportunity and the will to use technology in a positive, cooperative, and even exemplary way under these very unusual circumstances.

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Summary

On January 1, 1998, the seven municipalities that previously comprised Metropolitan Toronto were amalgamated to become a new, unified City of Toronto. More than 50,000 municipal employees were affected in the move, and the size of the City's combined annual budget approaches that of some small countries. Urban planning and development services have been consolidated into a single department that is responsible for planning, building, municipal standards, and licensing activity. Information technology will help to link functions, services, and staff across all of the former jurisdictions and each of the discrete activities of the new City, and serve as a catalyst in the achievement of consistency, efficiency, and convenience. Although it will be years before the dust settles, this article discusses some of the key technology-related issues of which municipal planning practitioners should be aware if such an amalgamation should be required of them.

Résumé

Le 1er janvier 1998, les sept municipalités qui faisaient auparavant partie de la Communauté urbaine de Toronto ont été fusionnées pour former la nouvelle ville unifiée de Toronto. Plus de 50 000 employés municipaux ont été déplacés à la suite de cette fusion et la taille du budget annuel combiné de la ville approche celui de certains petits pays. Les services d'aménagement urbain et de développement ont été fusionnés en un seul service chargé de l'urbanisme, de la construction, des normes municipales et des permis. La technologie de l'information aidera à relier les fonctions, les services et le personnel à l'échelle de toutes les anciennes municipalités et chacune des activités de la nouvelle ville, et servira de catalyseur pour assurer la cohérence, l'efficacité et la commodité. Même s'il faudra attendre des années avant que la poussière ne soit complètement retombée, cet article examine certaines des principales questions d'ordre technologique sur lesquelles les urbanistes municipaux devront se pencher s'ils doivent éventuellement se soumettre à une telle fusion.