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Interorganizational Networking in the Local Government Sector: Case Study of the Municom Network

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ABSTRACT

Individual municipal organizations in the Province of Ontario have traditionally interacted for a number of purposes, utilizing a variety of different mechanisms and communication media. Emerging information and communication technologies are now promising to alter the state of interorganizational relations throughout the local government sector.

The Municom Network is a new initiative launched by the Association of Municipalities of Ontario to link Ontario municipalities through an electronic network, allowing organizations to share a wide variety of information resources and communicate more freely. The network is an "intranet", or private Internet which is built upon the TCP/IP protocol and uses the same "web browser" software as is used for retrieving information on the public Internet. Information is provided by AMO, several partner associations, and individual subscribers. A "virtual private network" ensures that transactions between subscribing organizations are secure and free from external tampering.

The network's use of the TCP/IP protocol is a strength because of its universal acceptance as a standard for interorganizational networking and its vast potential for future expansion. Maintenance of the information content is largely decentralized, making content provision very accessible to individual organizations, but also raising certain issues in terms of consistency and reliability. Although security remains an issue, as with any system which is linked to the Internet, adequate precautions appear to have been taken. The interface, taking advantage of the currently rapid pace of development in browser software technology, seems to be well-designed and intuitive to most users. The network's strengths in term of content provision lie in its ability to keep municipal practitioners current with issues affecting them on an ongoing basis. It appears somewhat less useful at this time as a comprehensive repository of municipally-related information for research purposes.

New technologies are enabling a shift in interorganizational relations from the simple exchange of information to more complex forms of collaboration. They are making possible new ways of doing business which allow smaller organizations to work in partnership with other organizations in the same and other sectors in order to accomplish mutual business objectives. This could have significant implications for Ontario's municipal sector, for which restructuring attempts to date have tended to favour organizational consolidation over business process redesign. Information and communication technologies could enhance the ability of local government organizations to provide for the delivery of services through dynamic partnerships and alliances with other organizations, while retaining their emphasis on representing local communities.

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1.1 Purpose, Method, and Outline

The ways in which individual public sector organizations interact with each other in the course of carrying-out their mandates is a subject of some interest within the field of public administration. This is particularly true of the local government sector which in many areas, including the Province of Ontario, is characterized by a large number of municipalities and other special purpose bodies operating in parallel as the local service delivery agents of the communities they represent.

With the great acceleration in the introduction of new information and communication technologies, radical new forms of interorganizational networks which were inconceivable only a short time ago are now becoming increasingly possible. These technologies may have the potential to vastly alter the current state of interorganizational relations in the local government sector and profoundly redefine the ways in which individual local government organizations operate within their external environment. The purpose of this project is to study the potential implications of these new technologies on interorganizational relations in the local government sector through a case study analysis of the Municom Nnetwork, a current initiative designed to electronically link Ontario municipalities.

The primary mode of research is a detailed and exhaustive analysis of the network content and functionality during the period comprising the final stages of the pilot phase and the

commercial introduction of the service. Interviews with several information technology practitioners, including staff at the Association of Municipalities of Ontario and at two of the pilot sites were also relied upon to clarify facts and confirm observations.

The remainder of this chapter examines the structure of the local government sector in Ontario and takes inventory of the ways in which local government organizations currently interact. The second chapter describes the Municom initiative, including its intended purpose, what sort of services it provides, and how it functions. The third chapter provides a detailed analysis of the network, focusing on the technical, functional, substantive (content), impact, and political/organizational aspects of the network. The fourth chapter attempts to extrapolate current trends in order to describe how interorganizational networks might function in the near future. The final chapter provides a series of conclusions and recommendations.

1.2   The Local Government Sector in Ontario

The local government sector in the Province of Ontario might be characterized as being organizationally fragmented in terms of the actual number of separate organizations which are responsible for ensuring the provision of local services to communities. This "fragmentation" can be said to occur along both geographic and functional lines.

Geographic Fragmentation

Evidence of geographic fragmentation can be observed in that the municipally-organized portion of the province in 1993 consisted of 830 municipalities, of which 39 were "upper-tier" municipalities (counties and regional municipalities) and the remaining 791 local

municipalities (lower or single-tier units).[1] In 1991, the Advisory Committee to the

Minister of Municipal Affairs on the Provincial-Municipal Financial Relationship noted

that:

> ...Ontario's municipal sector is characterized by many very small, relatively
> sparsely populated municipalities and a few large municipalities, where the
> vast majority of the population lives. Almost 75 per cent of all lower-tier
> municipalities in Ontario have a population of less than 5,000 people, while
> only 2 per cent have populations of more than 100,000. Expressed
> differently, 15 per cent of all lower-tier municipalities contain 80 per cent
> of Ontario households.[2]

The committee's report went on to claim that this state of affairs results in it often being

very difficult for the province's numerous smaller municipalities to acquire necessary

administrative resources due to their limited ability to raise revenues from such small

populations.[3]

While Ontario's numerous municipal organizations reflect a diverse range of local needs

and sensitivities with respect to the delivery of services, they also have much in common.

In particular, they are all the primary local service delivery agents for the communities they

represent and all exist within a relatively common legislative framework with the

Municipal Act as their core enabling statute. It might therefore be said that while the

circumstances of municipal organizations across the province at any given time vary

widely, their commonalities, or areas of mutual interest are many. The combination of a

frequent lack of resources and large degree of common interest with their peer

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[1] Ontario, Ministry of Municipal Affairs, Municipal Directory 1993 (Toronto: Queen's Printer for Ontario, 1992), 118-119.

[2] Ontario, Advisory Committee to the Minister of Municipal Affairs on the Provincial-Municipal Financial Relationship, Report of the Advisory Committee to the Minister of Municipal Affairs on the Provincial-Municipal Financial Relationship, (Toronto: January 1991), 9.

[3] Ibid, p. 10.

organizations may give individual municipalities a strong incentive to participate in various forms of interorganizational exchange.

Functional Fragmentation

Functional fragmentation also exists in the local government sector because of the great prevalence of special purpose bodies in the province which are charged with providing specific local services. These include such additional bodies as police commissions, health units, conservation authorities, public utilities commissions, parks boards, and school boards.[4] While the emphasis of the report from this point forward is on the administration of municipalities specifically, consideration is given later to the implications for special purpose bodies resulting from the implementation of intermunicipal networks such as Municom.

1.3   Typology and Classification of Interorganizational Relations

Alter and Hage provide a useful typology for classifying different types of interorganizational relationships.[5] This typology is organized along three dimensions: competitive or symbiotic cooperation, numbers of organizations involved in the cooperative effort, and the extent of cooperation.

Along the first dimension, interorganizational relations between municipal organizations seem to best fit into the class of "competitive cooperation among same sector organizations" as they tend to provide many of the same services and do not directly rely

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[4] C. Richard Tindal and Susan Nobes Tindal, Local Government in Canada: Fourth Edition (Toronto: McGraw-Hill Ryerson Limited, 1995), 2.

[5] Catherine Alter and Jerald Hage, Organizations Working Together (Newbury Park, CA: Sage, 1993), 44-80.

on each other as one would find in sectors where goods or services pass along a value chain from one organization to the next. Municipalities, in many instances, could certainly be said to be in competition for economic growth and taxable assessment.

The other two dimensions for those relationships that fall into competitive cooperation among same sector organizations are displayed in Figure 1. As will be discussed in the next subsection, many of the categories seem applicable to interorganizational relationships in the municipal sector.

1.4 Inventory of Interorganizational Relations in Ontario's Municipal Sector

At present, there does not appear to exist much in the way of substantial research which investigates the current state of interorganizational relations in the local government sector. Such an undertaking is clearly beyond the scope of this project. However, it may be nonetheless useful to consider what some of these are and attempt to build a crude inventory.

Types of Interorganizational Relationships

Interorganizational relationships can exist for a number of different purposes and involve the exchange of different articles, both tangible (physical materials) and intangible (information and ideas).

Figure 1

Competitive Cooperation Among Same Sector Organizations

	Dyadic and Triadic Obligational Linkages	Multiorganizational/ Sector Wide Obligational Networks
Limited Cooperation:		
information	**Joint Agreements:** pooling and exchanging information.	**Communication Networks:** pooling and exchanging information, professional associations.
friendship	**Social Agreements:** interpersonal support, dispensing favors.	**Social Networks:** emotional support and seeking advantage.
materials	**Subcontracts:** procuring.	**Purchasing Networks:** procuring.

	Promotional Linkages	Promotional Networks
Moderate Cooperation:		
technological objectives	**Joint Ventures:** joint product development.	**Research Consortia:** collectively financed and managed R & D.
economic objectives	**Partnerships:** borrowing and investing; advertising and purchasing.	**Cooperatives:** centralized purchasing and marketing **Consolidated Campaigns:** fund raising.
political objectives	**Alliances:** lobbying.	**Trade Associations, Unions:** lobbying and achieving common goals.

	Production Linkages	Production Networks
Broad Cooperation:		
production	**Joint Ventures:** manufacturing.	**Cartels:** controlling a market niche.

Source: Catherine Alter and Jerald Hage, Organizations Working Together (Newbury Park, CA: Sage, 1993), 51.

Sharing of Administrative and Policy Expertise

Although there does not presently exist sufficient evidence upon which to verify such a conclusion, the most common type of interorganizational exchange could very well be the exchange of administrative and policy expertise. At any given time, different municipal organizations are contending with many of the same issues in terms of administrative practice and policy direction, and so look to other jurisdictions to see how they contend with those issues. Those organizations which they look to may be neighboring ones, or may be more distant ones whose circumstances are similar in most other respects.

The expertise which is exchanged may take the form of "hard" data such as copies of reports, by-laws and other municipal publications, or in many other cases may be "soft" data such as informal advice and personal opinions. In Alter and Hage's typology, this would correspond closely with the category of "information" under "Limited Cooperation".

Political Mobilization

Municipalities may exchange information regarding the political environment in which they operate. This may occur through either informal or formal channels. The intent of such exchange is usually to mobilize action towards emerging senior government policy that directly affects municipalities and their operations. This would correspond with "political objectives" under "Moderate Cooperation" in Alter and Hage's typology.

Procurement

Municipalities which have entered purchasing agreements with other organizations may be

involved in various relationships with respect to the exchange of money and materials. This would correspond with "materials" under "Limited Cooperation" and "economic objectives" under "Moderate Cooperation" in Alter and Hage's typology

Coordination   .

In some instances, municipalities may work together to ensure that their delivery of services is coordinated and does not result in unnecessary overlap or redundancy. This may be important in some major centres where residents may effectively have access to the services of several municipalities, or in two-tier arrangements where responsibilities for some services are functionally divided between the lower and upper tiers.

Collaboration

Municipalities work together through intermunicipal agreements or upper-tier structures in order to jointly undertake a special project, deliver an ongoing service, or form a new policy. This involves a much higher degree of ongoing interorganizational exchange than the mere dissemination of administrative and policy expertise and would correspond with "production" under "Broad Cooperation" in Alter and Hage's typology.

Mechanisms for Interorganizational Exchange

The classification of interorganizational relationships can be further refined by the specific mechanisms employed for the purposes of exchange. These mechanisms have been divided here into informal and formal mechanisms, based on the level of commitment of the involved organizations, and the sophistication of the mechanism in question.

Informal Mechanisms

Conventional Policy Research Methods

This refers to the methods often used when an organization decides to investigate whether to pursue a new policy direction. It will often take a random or semi-random sample of how other organizations in the same sector are dealing with this issue, usually through an informal telephone survey.

Informal Colleague Networks

These are the informal networks which exist of individuals in different organizations that communicate or otherwise socialize on a regular basis. The individuals in these networks may have been originally introduced through one of the more formal mechanisms. These may resemble the "Social Networks" in Alter and Hage's typology.

Interorganizational Staff Mobility

The traditional career path of personnel in municipal organizations often results in movement between municipal organizations rather than simply within organizations or between municipalities and other-sector organizations. In some cases, organizations may conduct interviews in part to better discern what is occurring within other organizations.

Formal Mechanisms

Local Government Associations

This refers to bodies such as the Association of Municipalities of Ontario and the Federation of Canadian Municipalities which are composed of elected local representatives and attempt to forward the interests of the municipal sector as a whole. In Alter and

Hage's typology, these would come under several of the multiorganizational/sector wide categories including communication networks, research consortia, and trade associations.

Local Government Professional Associations

This category encompasses those professional associations whose members work within municipal organizations. This includes such bodies as the Association of Municipal Clerks and Treasurers of Ontario and the Ontario Municipal Administrators Association. As with Local Government Associations, these could come under the multiorganizational/sector wide categories of communication networks, research consortia, and trade associations in Alter and Hage's typology.

Other Professional Associations

Similar to the last category, this category pertains to those professional organizations whose members do not work exclusively in the municipal sector, but which nonetheless contain significant numbers of municipal personnel. Examples include the Ontario Professional Planners Institute and Association of Professional Engineers of Ontario. Again, the multiorganizational/sector wide categories of communication networks, research consortia, and trade associations from Alter and Hage's typology would apply to this category.

Other Publications

Journals and other periodicals such as *Municipal World* which are not attached to any one professional association may nonetheless provide for various types of indirect exchange between municipal organizations. Journals which are associated with a particular research

facility or "think tank" such as the Cordillera Institute could come under the category of "research consortia" in Alter and Hage's typology.

Continuing Education

In recent years, employees in many different sectors have been committing to further education on a part-time basis through a variety of continuing education programs. These may include programs oriented towards local government such as the University of Western Ontario Local Government Program as well as programs in related disciplines which can also tend to attract significant numbers of municipal personnel.

Provincial Government

The Ministry of Municipal Affairs has a very close operating relationship with the province's municipalities, particularly through its set of regional field offices. Other ministries also have frequent contact with municipalities in the course of their operations. This results in various types of exchange occurring, with the province acting as a mechanism for disseminating information about the experiences of different organizations through the sector.

Consultants

In a similar fashion, consultants may work with many different municipal organizations, often at the same time. This can result in organizational information and experience being indirectly disseminated throughout the sector.

Purchasing Agreements and Networks

In many instances, different municipal organizations have joined together for purchasing

and acquisition purposes in order to secure more favorable prices and enjoy various economies of scale. These are directly equivalent to Alter and Hage's multiorganizational/sector wide purchasing networks.

Upper-Tier Federations

County councils consist of indirectly elected representatives drawn from the county's constituent local municipalities while most regional councils consist of either indirectly-elected representatives drawn from the region's area municipalities or directly-elected representatives who sit on both area and regional councils. This results in very high levels of intermunicipal exchange and constitutes a form of multiorganizational joint venture in Alter and Hage's typology. The "Cartel" category might be said to apply in some instances where the upper-tier is strong enough so as to suppress competition amongst its constituent members.

Intermunicipal Agreements

These were once a quite common mechanism for providing certain services where large spillovers were present or where economies of scale dictated the need to provide the service at a larger scale than the local municipality but at a smaller scale than the provincial government. Now largely replaced by regional municipalities in the most populous parts of the province, intermunicipal agreements are still found to some degree in those parts of the province which have not been subject to extensive municipal restructuring. Again, these are largely analogous to multiorganizational joint ventures in Alter and Hage's typology.

Communication Media

A variety of different media are employed in interorganizational exchange, be it through informal or formal mechanisms.

Personal Contact

The most basic form of exchange, of course, is through in-person or face-to-face contact. It may still be one of the most effective for both interpersonal and interorganizational exchange. Municipal personnel and elected representatives from different organizations may meet frequently through conferences or on-site visits.

Physical Document Exchange

Physical documents such as reports or cheques may be physically exchanged through the postal service or by courier service.

Electronic Linkages and Interorganizational Networks

Interorganizational exchange occurs electronically through analog technologies such as the telephone system and increasingly through digital technologies such as facsimile and electronic mail.

The last couple of years have witnessed explosive growth in use of the Internet, an electronic network linking computers around the world through common standards and protocols for information exchange. In addition to a universal format for electronic mail across different computing platforms, the Internet also allows individuals and organizations to "publish" information in a hypertext-based format on the "World Wide Web". This information can then be easily accessed from virtually anywhere, including the

desktops of individuals in other municipal organizations. Networks which extend beyond the traditional boundaries of the workgroup and the organization are formally referred to as interorganizational networks.[6]

1.5 Chapter Summary

The interaction of different local government organizations is an important, if somewhat understudied, area of interest to public administrators. In Ontario, the municipal sector is characterized by a large number of quite small organizations. This has created certain problems in terms of access to resources. However, individual municipal organizations can have much in common, providing them with incentive to engage in interorganizational exchange and networking.

While much is unknown about interorganizational relations in the municipal sector, it is clear that municipalities currently interact for a number of different purposes, employing a variety of formal and informal mechanisms and using several types of communication media. Most intermunicipal relationships involve limited or moderate levels of cooperation, with some examples of broad cooperation also to be found.

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[6] James A. O'Brien, Introduction to Information Systems. (Boston: Irwin, 1994), 126-127.

CHAPTER TWO: THE MUNICOM INITIATIVE

2.1 Introduction

At its 1995 annual conference, the Association of Municipalities of Ontario (AMO)
demonstrated a model for a new information network designed specifically for Ontario's
municipalities called Municom. A pilot of the network commenced on December 15,
1995 for three months and involved six municipal organizations: the City of London,
Wellington County, Halton Region, York Region, Metropolitan Toronto, and the City of
North Bay. After the official pilot, the network continued to be beta tested until its
commercial release on July 2, 1996. The official kickoff and ribbon-cutting for the
network took place in August 1996 at the Association's 1996 annual conference.

The network content has been developed in partnership with several other organizations
including the Association of Municipal Clerks and Treasurers, the Municipal Finance
Officers Association, and the Municipal Information Systems Association. According to
AMO, the main features which Municom offers are:

- it organizes a wide array of municipal information/content into one source;
- it provides access to current and timely information;
- it provides tools for sharing information among users with similar interests;
- it provides public access to select services; and
- it offers secure and reliable communications links.[1]

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[1] Renata Kulpa, "AMO to launch MUNICOM network" in Municipal World. (St. Thomas, Ontario: March 1996), 32.

Municom is also supposed to offer the following key benefits to users:

- one stop shopping for all municipal information services;
- up-to-date information anywhere, anytime;
- helps people in different places work together more effectively;
- extends reach of municipalities to residents and businesses;
- provides low-cost Internet access;
- provides significant savings in staff time; and
- reduces phone, fax and mail costs.[2]

It can be seen from this description that a large element of Municom potentially affects

interorganizational relations between Ontario's municipalities. Specifically, Municom

appears to be intended to:

- allow organizations to extend their grasp and acquire municipally-relevant information from diverse sources
- allow individuals in different organizations to easily share information and collaborate
- ensure that municipal organizations across Ontario have equal access to valuable information resources

2.2   Description of the Municom Network

The Municom network is designed around the TCP/IP protocol (Transmission Control

Protocol / Internet Protocol), the communication standard which enables the Internet to

function. The network is described by AMO as a "municipal intranet". An intranet is

essentially a "private internet" in that it relies on the same technology and functions in

much the same way as the Internet, but its use is restricted to a defined user community.

Intranets based on TCP/IP permit the use of the same popular "web browser" technology

as the Internet, allowing organizations to design easy-to-use graphical "web sites" for

internal use which resemble the sites on the universally accessible World Wide Web. The

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[2] Ibid.

use of TCP/IP also means that Intranets can connect to, and seamlessly integrate with, the broader Internet.

In their short history, intranets have typically been implemented within individual organizations as a means of facilitating intraorganizational communications and disseminating crucial information internally in a timely fashion. This can be particularly useful where the organization is located in more than one geographic location. Municom, however, is clearly one of the first instances of an intranet which is designed for use within an entire sector rather than within an individual organization.

Municom essentially consists of four elements which are described in turn: the user interface, information content, communications infrastructure, and data warehousing.

User Interface

Like other intranets, MUNICOM uses graphics-based hypertext as its user interface and requires the use of a web browser. Hypertext supports the "linking" of sections of different documents, so that users can quickly and easily peruse a wide variety of information obtained from different sources through a single interface. Municom also relies heavily on the use of graphical images in an effort to make the interface friendly to all users and avoid the user-alienating effects often associated with text-based interfaces.

To enter the network, the user is required to enter an ID and password on the Municom login screen. Successful user authentication takes the user to the Municom Front Page. At any given time, the Front Page contains a number of announcements of interest to municipal practitioners with corresponding hyperlinks in order to obtain further

information. The page also contains links which take the user to all of the different sections of Municom. These are described next.

Information Content

Municom Alert

This section contains information on recent events and emerging issues and is intended as the section of the network which allows municipal practitioners to monitor the municipal sector and keep current. Renata Kulpa, AMO's Manager of Information Systems, explains that the Municom Alert is:

> ...where you'll find the latest events and news, scheduled meetings and other information. It's like a daily newspaper -- with late-breaking stories as well as longer feature articles-- but it will also serve as a daily bulletin board, listing events and other points of interest.[3]

Subsections of Municom Alert include Administration and Management, Today's Newspaper Clippings, Municipal Alerts, Policy News, Queen's Park Highlights, and What's New at AMO. These sections provide links to information stored on the Municom server as well as information stored elsewhere throughout the Internet and provided by different organizations and individuals.

Municom Connect

In this section of the network, municipal personnel can communicate with each other directly and exchange information in a variety of ways. Carroll and Broadhead refer to this as "knowledge networking", describing it as "the ability to harness on-line information on a particular topic by receiving information on that topic or by seeking information or

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[3] Introducing Municom, (http://www.municom.com/municom_alert/introducing.html)

answers to questions by discussing a topic with others on-line."[4] In other words, a

subscriber can preselect topics of interests and receive regular updates on that topic from

peers and colleagues elsewhere in the field, or may actively participate in on-line

discussions by asking and providing answers to specific questions.

This type of information exchange is accomplished either through mailing lists or

discussion groups. Mailing lists are collections of e-mail addresses which allow a single e-

mail message to be sent to a large group of subscribers interested in a single topic.

Discussion groups (also called newsgroups) allow subscribers to directly peruse messages

at any time through software called a newsreader, now usually included in the web

browser. Discussion groups are the more versatile technology, in that they tend to

provide a greater structure to discourse and exchange. However, mailing lists have the

advantage of being accessible through any e-mail software, and may be more appropriate

for sending regular updates to lists of persons and organizations who need to monitor

certain issues but do not have the time to actively participate in ongoing discussions.

Infomine

The Infomine is the main index or information catalogue of Municom. It points

subscribers to a variety of information resources, some of which are stored on the

Municom server, and some of which are stored elsewhere on the Internet, and also

provides AMO's "value-added" annotations. Of those resources stored on the Municom

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[4] Jim Carroll and Rick Broadhead, 1996 Canadian Internet Handbook (Scarborough, ON: Prentice Hall Canada Inc., 1996), 184.

server, most are provided by AMO and its partner associations. However, AMO is also encouraging individual members to make information available and publish it on Municom.

The Infomine is divided into two main sections, Policy and Management/Administration. The policy section contains links to information on government relations, policy directives, and independent reports and findings on municipal policy issues. It is possible to search under a number of specific policy areas including culture, tourism and recreation, economic development and finance, employment and labour, environment and energy, health and social services, housing, land use planning, protection and enforcement services, and public works, roads and transportation.

The management/administration section contains links to information on the management and administration of municipal organizations. Information can be searched under the subject areas of Municipal Administration (organization and structure of municipal government), Information Technology, Legal and Parliamentary (statutes, case law, etc.), and Municipal Management (innovations, best practices, public relations, council information, municipal conflict of interest, etc.).

Communications Infrastructure

As discussed previously, Municom is a TCP/IP-based network. The reliance on this universally-accepted open standard means that Municom can be accessed from any point in the world equipped with a TCP/IP connection and a web browser. However, AMO has taken the network capability one step further by developing a private TCP/IP network for

exclusive use by Ontario municipalities, in partnership with Bell Global Solutions, a subsidiary of Bell Canada.

AMO refers to this as a "virtual private network" in that the Municom communications infrastructure utilizes Bell's existing telecommunications facilities to effectively create an intermunicipal network. All Municom data on the private network is carried across Bell's existing TCP/IP systems without entering the broader public Internet, ensuring a high degree of reliability and security. In contrast, TCP/IP communications across the public Internet may be delayed or compromised as they are routed from one system to the next.

TCP/IP communications are routed throughout the province to regional hubs which serve an area covered by an individual county, regional municipality, northern district, or in some cases a combination thereof. From there, individual municipalities are connected into the network through special high-speed linkages. In most cases, these linkages are made through Bell's Integrated Services Digital Network (ISDN), which is capable of speeds of 64,000 bits per second and 128,000 bits per second. However, there are still a number of areas within the province where ISDN service has not yet been deployed. Municipalities in these areas can link to the network through more expensive "dedicated access" lines capable of 56,000 bits per second and 128,000 bits per second. At the municipality's end, the TCP/IP connection is fed into a "router", a device which connects to the organization's Local Area Network (LAN). This makes it possible for any workstations connected to the LAN to access both the Municom network and the public Internet at relatively high speeds through a TCP/IP stack and web browser. For those organizations interested in accessing Municom on a non-dedicated basis (switched or dial-

up access), AMO and Bell provide a bundled package which includes an account on Sympatico, Bell's dial-up Internet access solution.

It should be clarified that access to the Municom content does not require the use of this communications infrastructure. As mentioned, it is possible to access Municom through any TCP/IP-equipped workstation in the world. In some cases, municipal organizations may already have a link to the Internet through another service provider. The disadvantage of accessing Municom through another service provider is that it does not guarantee a secure link. By accessing Municom through the private municipal network, it is possible to conduct secure transactions such as the exchange of confidential documents or financial transactions without fear of external tampering.

Data Warehousing

A subscription to the full Municom service also provides a municipality with "data warehousing" services on a centralized server which can be used for establishing a "municipal home page" on the World Wide Web. As touched upon in the previous chapter, the creation of a home page, or "web site", has become an increasingly popular means of establishing a corporate presence on the Internet amongst both private and public sector organizations. While larger municipal organizations may have the resources to maintain an Internet server internally, smaller organizations may be at a disadvantage in this regard. By sharing server resources with other organizations through the data warehousing service, these organizations can establish a similar presence on the Internet at a much lesser cost.

AMO also envisions the creation of home pages as a tool for local revenue generation, pointing out that 1/3 of American local governments charge user fees for access to their on-line networks.[5] In addition to providing residents with information on local services and council activities, these networks often provide such value-added features as the ability to pay taxes and fines on-line, as well as renew licenses and permits.

The emphasis of most municipal home pages tends to be on attracting new business and industry by providing on-line economic development information as well as providing current residents with information regarding local services. However, in many cases a home page or web site can also indirectly act as a medium for disseminating information on policies and programs between municipal organizations.

2.3 Other Interorganizational Local Government Resources on the Internet

While Municom was selected as the case study for this project, it is not the only on-line resource available to local governments for the purpose of interorganizational exchange. A number of other resources have been established which can be accessed through the Internet and allow for various types of exchange between local government organizations. Several of these are described here for comparison.

CivicNet (British Columbia)

CivicNet is an initiative to provide "a single window access to and for local Governments in British Columbia". It is jointly managed by a management committee composed of

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[5] Benefits, (http://www.municom.com/about/benefits.html)

representatives of the Municipal Officers Association, Government Finance Officers Association, Municipal Information Systems Association of BC, Union of BC Municipalities, Ministry of Municipal Affairs, and the Ministry of Aboriginal Affairs. CivicNet fills a niche in British Columbia similar to that of Municom in Ontario. While it is somewhat less ambitious and comprehensive in scope than Municom, it is provided as a free service available to any person or organization through the Internet.

Like Municom, CivicNet contain links to a number of local government resources, although very little of the actual information resides on the CivicNet server. However, the site does contain current news of interest to British Columbia municipalities including updates on the activities of the Union of BC Municipalities, British Columbia's equivalent of AMO. CivicNet also provides discussion groups and mailing lists, much as Municom does, for the purpose of facilitating the direct exchange of expertise and other information between municipal organizations.

LoGON (Local Government On-line)

LoGON is an initiative of the Hemming Group, the publisher of several local government-oriented periodicals in the United Kingdom, and is billed as a "one stop shop for local government in the UK". It is provided as a free service accessible through the Internet, but does require users to register themselves in order to access the full service.

LoGON contains recent news and updates for local government managers in the United Kingdom as well as detailed excerpts from the most recent issues of the Hemming Group print publications including *Municipal Journal, Surveyor, Cities Management, Electronic*

Public Information Today, and *Municipal Yearbook*. The "Recruitment On-line" section

links to job advertisements from the *Municipal Journal* and *Surveyor* and allows potential

candidates to request additional information on positions through e-mail. LoGON also

contains pages with information on several local government associations which exist in

the United Kingdom including the Association of Metropolitan Authorities, the

Association of District Councils, and the Association of County Councils as well as

professional associations such as the Society of Local Authority Chief Executives and the

Technical Advisers Group. A number of other associations and research centres provide

information through LoGON including the London Research Centre, Local Government

Information Unit, Local Government International Bureau, and the Local Government

Management Board. Like Municom and CivicNet, LoGON also provides links to other

local government resources located elsewhere on the Internet.

LoGON provides for more direct interorganizational networking through the "Digital

Pages", a database of e-mail addresses for local government managers throughout the

United Kingdom. Addresses are organized in the database alphabetically by authority

name. At present, LoGON does not provide any sort of multi-user communication forum

such as mailing lists or discussion groups.

LGNet (Local Government Network)

LGNet is an American initiative provided by the Innovation Groups (IG) which is intended

to "better serve local government professionals". Like the other networks discussed here,

it can be accessed through any Internet connection and, with the exception of one section

of the service, is free of charge to users.

LGNet is divided into six sections. The Knowledge Center contains a newsletter and information on various local government resources published by IG. The Information Exchange provides a discussion group area for local government professionals. This is the one section of the system which requires use of a paid user account, presumably in an attempt to keep individuals outside of the municipal sector from disrupting conversations on local government issues. The Training Source contains information on seminars and workshops provided by IG. The Local Government Resource Directory provides links to local government and other public sector sites on the Internet. The Regional Information section contains links to information on IG's regional site offices, as well as links to other regional local government networks in the United States. The Business Network contains information on several other companies which provide products and services to municipalities.

While mainly serving as a marketing tool for the promotion of the Innovations Groups' products and services, LGNet provides a possible model for a national-scale local government network. By providing links to sub-national networks, it can become possible to build a geographic hierarchy of systems for interorganizational networking.

FinanceNet

FinanceNet is the largest interorganizational networking initiative yet undertaken in the public sector. Established and supported by U.S. Vice President Al Gore's Office of the National Performance Review, FinanceNet "reaches across geopolitical boundaries to link financial management administrators, educators and taxpayers worldwide to catalyze

continuous improvements in the productivity of government personnel and in the stewardship and accountability for taxpayer resources."

FinanceNet is too extensive in scope to completely document here, but it should be noted that as a public sector resource it is not only federal in focus, but also provides information of interest to state and local governments. It contains many links to public sector resources across the Internet, and directly hosts sites for a number of professional associations. FinanceNet also has a strong emphasis on direct interorganizational networking as evidenced through the numerous mailing lists and discussion groups which it hosts, several of which are intended specifically for local government managers.

Interorganizational Networking on the public Internet

As discussed in the previous section on data warehousing and in the previous chapter under the heading of electronic linkages, the public Internet facilitates interorganizational networking even in the absence of formal initiatives such as Municom and the others discussed in this chapter. At present, the most common use of the Internet for interorganizational networking is the exchange of electronic mail messages. However, most larger municipal organizations, and increasingly many smaller ones, have also recently established sites on the World Wide Web. These sites are periodically indexed in the several publicly-accessible Internet search engines, allowing anyone with Internet access to directly locate and obtain information from the local governments which have established sites on the Internet. There are also many other indexes to local government resources on-line such as the web sites of research centres and other organizations which

focus on local government (e.g. Municipal World, the Local Government Institute at the University of Victoria, and the Maritime Municipal Training and Development Board).

2.4 Chapter Summary

The Municom network is a private network or "intranet" developed by the Association of Municipalities of Ontario and is intended to electronically link Ontario's municipalities. Through the use of the a web browser interface, local government officials and representatives can tap into a variety of information contained on both the Municom service, and elsewhere throughout the Internet. Information resident on the Municom service is provided by both the Association and its individual member municipalities. Municom also consists of a "virtual private network" which provides subscribers with a communications medium which is more secure and reliable than the public Internet. Another feature of the service provides subscribing municipalities with the ability to publish municipal home pages or "web sites" which can be used as a marketing tool for attracting investment, as well as an alternate means of providing information to residents and taxpayers. These sites can also indirectly act as a medium for interorganizational exchange.

A number of similar initiatives exist in other jurisdictions including CivicNet in British Columbia, LoGON in the United Kingdom, and FinanceNet in the United States, all of which are publicly accessible through the Internet. It is also possible, in many cases, to access local government resources on the Internet directly. This can be accomplished by using one of the network's many search engines or general indexes, as well as the indexes of local government resources maintained by educational institutions and research centres.

CHAPTER THREE: ANALYSIS OF THE MUNICOM INITIATIVE

3.1 Introduction

The following analysis of the Municom initiative was conducted along five dimensions:

technical, functional, substantive (content), impact, and political/organizational. As

previously described, analysis was conducted through direct examination of network

content and infrastructure, as well as interviews with information technology practitioners.

3.2 Technical Analysis

Communications Standards

Over time, a number of proprietary communications standards have arisen for

internetworking, or connecting computers in one organization with those in another.

Where such standards are not sufficiently embraced, regardless of their capability or

functionality, investments can become costly for those organizations who find themselves

locked-in to a gradually obsolete technology.

The construction of Municom around the TCP/IP protocol is a clear strength in that it

provides the network with the capability to grow in the future and is probably the best

guarantee against longer-term obsolescence, notwithstanding the current pace of change in

computing and communication technologies. As Carroll and Broadhead have stated,

"...TCP/IP has become the *de facto* standard through which you might link a computer from your company to that of another company."[1]

Although TCP/IP is already firmly entrenched as the standard for interorganizational networking, it is of significant interest that it is included as an integral part of the new Microsoft Windows 95 operating system. As Carroll and Broadhead state:

> Perhaps the most important thing about Windows 95 is the fact that Microsoft has included the TCP/IP protocol directly within the operating system. This more than anything has given notice to the rest of the world that TCP/IP really and truly is becoming the overriding protocol that will link together different computers around the world.[2]

The practical effect of this is that organizations whose local area networks are connected to the Internet no longer have to purchase a separate TCP/IP stack for each workstation as they had to with the previous version of Windows. Rather, providing end-users with access to Municom and the Internet merely requires reconfiguring Windows 95's network settings appropriately and installing a web browser.

A potential problem, at least in the short term, is that TCP/IP access is still not universally available in all areas. While Internet service providers are widening their coverage across the province, rural areas can still experience problems with line quality due to outdated analog switching equipment. This has already created problems in terms of making Municom available to some smaller and more isolated municipal organizations. However, this situation is expected to improve. Bell Canada has recently indicated that it will soon be upgrading the quality of many of its rural connections.

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[1] Jim Carroll and Rick Broadhead, <u>1996 Canadian Internet Handbook</u> (Scarborough, ON: Prentice Hall Canada Inc., 1996), 4.
[2] <u>Ibid</u>, p. 458.

Network Maintenance

The issues surrounding which persons or parties are responsible for the maintenance of the content and infrastructure of an interorganizational network can play a key role in several areas, including the ultimate form the system will take, its usefulness to end users, and its reliability over time.

AMO is taking a very decentralized approach to the content provision aspects of Municom. While AMO is responsible for all of the content which resides on Municom, it is encouraging its partner associations and member municipalities to submit a large portion of the information which will be made available. The Municom content is also decentralized in that much of it resides elsewhere on the Internet. In these instances, Municom has no control over the actual resource including whether or not it will continue to exist in the future. Presumably, AMO has decided in each instance that the linked resource is both accurate and reliable. While a decentralized content strategy has the strength of making content provision very accessible, it can raise questions about consistency and reliability in terms of ensuring that the information provided on the network continues to meet the needs of users over time.

Responsibility for the network infrastructure is divided several ways. Bell Global Solutions maintains the primary Municom server itself, while AMO maintains the server that contains much of the stored content. Bell is responsible for the actual maintenance of the virtual private network connecting organizations, which exists as a part of its greater TCP/IP network. The network routers at each Municom site are configured and maintained by another organization, WorldLinx of Ottawa, and are supported on a 7 day a

week, 24 hour a day basis. Responsibility for the proper functioning of each workstation and local area networks continues to remain with the individual municipal organizations. Those organizations which access Municom through a dial-up solution other than Sympatico will need to select a reputable Internet service provider as this will have an important bearing on the reliability of their connection to Municom. In general, it appears that the infrastructure side of the responsibility for network maintenance is quite strong. The most crucial links in the network are maintained by Bell Canada, an organization which clearly has the resources to ensure that the network remains reliable and well-maintained.

Network Security

With the implementation of any new information system or computer network comes related concerns over security. The possibility of unauthorized persons tampering with data or obtaining confidential information is one which all network administrators must be prepared for. Recently, many concerns have been expressed over Internet security in particular as more organizations have begun to move portions of their business directly onto the Internet.

The content portion of the network which resides on the Municom server appears relatively resistant to the sort of outside tampering which has played havoc with some organizations' web servers, as it requires password authorization before allowing any sort of access. However, security on TCP/IP networks is far from being an exact science. New holes in security are being discovered as quickly as developers are filling them in.

This risk from outside tampering can certainly be minimized by ensuring that the more common and obvious security holes are filled.

If a security breach were to occur on the Municom server, however, it would presumably not be critical since it does not store any vital or confidential data. The server, which is maintained by Bell Global Solutions in Ottawa, does not directly store any network information. Rather, it retrieves data from other servers which have in place a "firewall", including AMO's server in Toronto. This network design greatly minimizes the risk of any serious security breaches occurring on the network.

Communications between organizations over the virtual private network are fully secure since they do not enter the public Internet at any point, but remain within the "network cloud" that links the Municom sites. While confidential information cannot be intercepted in transit by third parties, there always exists the possibility that it can be accessed through the Internet once it has reached its destination. For this reason, individual organizations need to ensure that the information on their local area networks is secure from outside tampering. In most cases this involves the implementation of a firewall and/or proxy server placed between the organization's local area network and the Internet connection. This may present the greatest area for concern with respect to network security since it is a decentralized responsibility, but it is one which most organizations should be up to the task of addressing adequately.

3.3 Functional Analysis

End-User Functionality

In the past, computer system and information network implementations have often paid

too little attention to whether the end-users who are supposed to use the system on a

regular basis will be able to do so with relative ease. In the case of some poorly designed

systems, users have given up in frustration and may refuse to use them. When a system

lacks the support of end-users, it will deteriorate in value to the organization, or in the

case of a commercial system, be unable to survive in the marketplace. It is therefore of

interest to determine whether Municom is indeed a "user-friendly" product or if poor

functionality negates any added value it may potentially offer organizations.

It is difficult to see Municom not being embraced from a functional perspective, based

solely on the fact that it is built on such an immensely popular user interface. The World

Wide Web is almost solely accredited with the explosive growth of the Internet in the last

couple of years. There is little doubt that this growth is attributable to the fact that the

World Wide Web introduced a user-friendly "point-and-click" graphical user interface to

the network, which previously required the use of awkward UNIX-style line commands

for data retrieval.

There are, of course, variations in web-site design. From a functional perspective, the best

sites tend to be the ones which are able to effectively convey information in an attractive

and readable format while also being intuitive enough for users to navigate. There seems

to be a consensus amongst many of those who have been exposed to Municom that it rates

quite highly from a design and functionality perspective. It utilizes attractive, eye-catching

graphics and is laid-out in a readable and easily navigable format. A considerable amount of attention appears to have been given to the site design.

One potential weakness in the Municom interface is that many of the screens rely on "frame technology". This new feature of browsers allows content from more than one location on the same site, or from different sites on the Internet altogether, to be displayed on the same screen within separate "frames". While this adds a great deal of versatility to the way in which Municom can present information (e.g. municipal information from elsewhere on the Internet can be presented in one frame while other frames provide link buttons which take the user back to Municom's menus), frames have been criticized on the ground that they crowd screens with too much information, making it difficult to read on many of the smaller 14" monitors which are commonly found at end-users' workstations.

3.4 Substantive (Content) Analysis

Information Quality

If the network is to fulfill its ostensible purpose of being a one-stop shop for all municipal information needs, it must provide information that is of a relatively high quality. What is of particular interest to determine is how the information provided by the network compares with information which is currently obtained through more conventional means, such as those inventoried earlier in this report. In other words, what is the "value added" that the network offers?

At the time that this report was written, Municom's strength in terms of information content appeared to be in its ability to quickly update municipal practitioners on issues of

immediate concern through the Municom Alert. The ability to instantly obtain the latest information from the provincial government, AMO, and other organizations whose mandate affects the municipal sector is a quite powerful one and could offer significant advantages over obtaining the same information through conventional channels. During the summer of 1996, topical issues that municipal practitioners were following on Municom included the "Who Does What" committee on provincial-municipal disentanglement, the police services review, environmental assessment reform, and the legalization of Video Lottery Terminals (VLTs). Municom also claimed the distinction of providing the first published consolidation of the post-Bill 20 Planning Act. This represents a significant innovation at a time when the Queen's Printer often has a difficult time keeping up with the pace of legislative reform.

The municipal-related media clipping service also appears to be a quite valuable service and may create savings for those organizations who presently subscribe to multiple media sources or run their own in-house clipping service. Smaller organizations which presently lack the resources to effectively monitor the media could also benefit greatly from this service.

It is not possible to provide a full analysis of the Municom Connect section of the network at this time as it is still in the process of being implemented and will become a more valuable resource as more organizations begin to use it. However, the experience with similar initiatives suggests that there could be a significant usage of the service. The ability of the Internet to facilitate direct interorganizational communications through electronic mail continues to be its most popular use among both private and public sector

organizations. Discussion groups and mailing lists, which facilitate multi-party communications, are the logical extension of electronic mail.

Where the Municom content is not as strong presently is in the Infomine section, which is intended to act as a central repository of municipally-related information. At the time that this was written, the resources within it appeared to be of varying degrees of usefulness and relevance. In many cases, the most useful resources appear to be those that are provided directly by Municom, such as the Revised Statutes of Ontario.

The value of some of the resources residing elsewhere on the Internet seems questionable, although the ultimate test will be in how the network is actually used by end users. At present, there is a discernible shift occurring in the quality of publicly-accessible Internet resources in that they are evolving from being primarily marketing and promotion tools towards being value-added information sources. This means that in the short term the onus may be placed on Municom to directly provide more of its information resources if it is truly to be a value-added information service. To do this may require more contributions from its individual subscribers, since they likely know best what sort of information they require on an ongoing basis. Some progress has already been made in this regard; the City of London recently published its entire Municipal Code on Municom.

Comprehensiveness

In addition to information of high-quality, municipal practitioners are looking for a source of complete and comprehensive information. In other words, they want to be able to know that they have collected all of the available information about a certain topic and do

not need to look elsewhere. At present, there appear to be a number of obvious gaps in Municom's information coverage, both in terms of the breadth or range of topics covered, and the depth afforded to each. While Municom appears to be meeting its commitment of providing useful and comprehensive coverage of current issues facing the municipal sector, it is unclear whether it will be able to provide a more comprehensive storehouse of municipal resources for research purposes. In August of 1996, the Infomine contained 208 links to various resources, 156 of which were located elsewhere on the Internet, and 52 of which were located on Municom. The majority of these links were to individual articles, although in some cases they led to pages containing additional lists of resources.

There is a feeling amongst many of those who have been exposed to Municom that while it structures and provides information in a very practical way and could greatly assist in their policy and management/administration research activities, it will not achieve its full potential until it contains a wider range of information. There is no absolute number of resources required in order to comprehensively cover a field, but one suspects that Municom may need to provide thousands rather than hundreds of resource links before it can truly assert to be a one-stop shop for municipal research purposes.

Efforts do appear to be underway to address this situation. There seems to be a consensus that the Municom content situation has begun to improve considerably since the service went commercial. In August 1996, as this was being written, a Content Management Group was formed to oversee the development of new Municom content. The next phase of content development on Municom will include gateways for seamlessly retrieving information from a number of existing databases administered by individual organizations

including municipalities and provincial ministries. This has the potential to greatly broaden

the range of information available through Municom while ensuring the security of

proprietary systems.

3.5 Impact Analysis

It would be of considerable interest to determine the effective impact that use of Municom

will have on organizational business processes. Unfortunately, it is next to impossible to

determine at this stage whether, for example, it will result in measurable savings in staff-

time, as AMO claims.

However, as a new medium for interorganizational exchange, Municom clearly has the

potential to strengthen the effectiveness of current interorganizational mechanisms.

Kenneth Cousineau, executive director of the Association of Municipal Clerks and

Treasurers, explains:

> Municom can eventually become the common link between them (AMCTO
> members). We can put an agenda out to our volunteers and members, 24
> hours a day, seven days a week, or we can send out material that needs to
> be reviewed. Our members can analyse it, and return it to us with their
> feedback, all through the network.[3]

Municom could clearly have an impact in terms of organizations' reliance on existing

communications media. Joe Swan, a City of London councillor who serves as a member

of the mayor's task force on information infrastructure, believes that there is a potential

for Municom to reduce the long-distance costs associated with all of the province's

municipalities continuously phoning each other.[4] It seems likely that while reliance on the

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[3] The Pilot, (http://www.municom.com/municom_alert/pilot.html)
[4] Rob Cribb, "London city hall to test customized database" in London Free Press (London, Ontario:
November 18, 1995), C11.

telephone as a communication medium may decrease somewhat, it will not be largely replaced. Individuals and organizations often rely highly on "soft" information such as the "off-the-cuff" remark, which can only be conveyed through direct personal communication. It may be the case that this sort of information can make the successful transition to electronic mail, but it is probably the case that persons would be less inclined to provide such information through electronic mail because it provides an electronic record of their statements and remarks for which they may later be held accountable. Some organizations have also recently taken to the monitoring of Internet communications which also may make certain individuals wary of what sort of information they would relate in electronic mail messages.

The facsimile seems a more likely candidate than the telephone for eventual large-scale obsolescence since it conveys information in a static, non-intelligent format and often at considerable cost for long-distance transmissions. Documents can be much more easily transferred through TCP/IP networks in their original electronic formats at very low cost, regardless of distance. This capability could also eventually result in reduced usage of postal and courier services, where there is no need to send an original copy. The security features of Municom's virtual private network address many of the concerns which organizations have previously had with moving more of their business directly on-line.

3.5   Political / Organizational Analysis

When a new initiative is undertaken which has implications for relationships between individual organizations, it is of interest to consider the motivations and interests of the

actors involved. In this case, the issue for consideration is AMO's reasons for developing the Municom network.

The association's self-described mandate is to "support and enhance strong and effective municipal government in Ontario (by promoting) the values of the municipal level of government as a vital and essential component of Ontario's and Canada's political system."[5] Its recent activities have included attempts to resolve the imbalance which has historically existed in provincial-municipal relations due to municipalities' constitutionally-subordinate status. In 1994, the association called for the provincial government to proclaim a "municipal charter", formally recognizing the role of the municipal sector and granting municipalities a much broader range of discretionary powers.[6]

An interorganizational network which increases the capacity of individual organizations to communicate and collaborate with one another would seem to be a logical progression from AMO's previous initiatives. Because of its ability to strengthen the relationships between individual municipal organizations, the network has the potential to allow the sector as a whole to present a more cohesive and unified front in its dealings with senior governments.

In the literature, it has been stated that an interorganizational network (in the traditional sense) itself may be formalized as an organization, referred to by some authors as a

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[5] About AMO, (http://www.municom.com/amohome/aboutamo.html)
[6] C. Richard Tindal and Susan Nobes Tindal, Local Government in Canada: Fourth Edition (Toronto: McGraw Hill Ryerson Limited, 1995), 338-339.

"mutual organization".[7] Certainly, AMO seems to already possess certain aspects of a mutual organization in the ways that it has traditionally acted as a formal mechanism for interaction amongst Ontario's municipalities. However, with an electronic network such as Municom, the potential may exist sometime in the future for AMO to shift from being a representative organization to one which acts in real-time, carrying out the combined will of Ontario's municipal sector. If the municipal sector were to attain the ability to mobilize as quickly as an individual organization, it could possibly shift the current balance of power in intergovernmental relations.

It is also of interest that the provincial government, through the Ministry of Municipal Affairs and Housing, has been generally supportive of the Municom initiative. The Ministry itself has provided some of the content and also uses the network to monitor issues in the municipal sector. This is certainly not inconsistent with the provincial government's record of encouraging efficiency and effectiveness in local service delivery without necessarily embracing the concept of a strengthened role for local government.

3.6 Chapter Summary

The building of the Municom network on the TCP/IP platform is a certain strength because of the universal acceptance of the standard and the opportunities it provides for the network to grow in the future. While maintenance of the network's content lies centrally with the Association of Municipalities of Ontario, the content is intended to be provided in large part by partner associations as well as its individual members.

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[7] Ernest R. Alexander, How Organizations Act Together: Interorganizational Coordination in Theory and Practice (Luxembourg: Gordon and Breach, 1995), 199.

Maintenance of network infrastructure is a divided responsibility involving a number of parties. Despite Internet security in general being a large concern to organizations currently, precautions appear to have been taken to protect Municom from unauthorized access.

The Municom interface, based on the World Wide Web, is a proven technology in terms of end-user functionality and usability. The network's content is most strong in the areas of updates and monitoring, as well as direct interorganizational communication, but of somewhat less value at this time as a comprehensive one-stop resource for municipal research. As use of the network grows over time, it could have certain implications for the future of conventional communication media such as telephone and facsimile transmission, as well as postal and courier services.

The Municom initiative is consistent with AMO's previous initiatives to strengthen Ontario's municipal sector. If widely adopted and used, the network could gradually change the role of AMO and perhaps even the nature of relations between the provincial government and the municipal sector.

CHAPTER FOUR:
THE INTERORGANIZATIONAL NETWORK OF THE FUTURE

4.1 Introduction

Information and communication technologies are presently advancing at an unprecedented

pace. Powerful applications are becoming economical for even the smallest organizations.

The interorganizational network of the not so distant future could be much different than

that of today. This could have profound impacts on the current structure and culture of

organizations. In this context, it is worth considering what some of the implications of

these rapid advances will be for municipal governments.

4.2 Rapid Advances in Use and Availability of Technology

Writing in 1995, Carroll and Broadhead felt that the Internet with its current capabilities

was being underutilized as a means of improving intergovernmental coordination.

> ...there is an increasing need to coordinate activities between all levels of
> government in Canada. The Internet is a tool that can reduce government
> redundancy. With at least three levels of government (federal, provincial,
> and municipal) in the country and in some cases more, there is a need to
> share ideas, experiences and success stories and to improve coordination
> across all levels of government. As a common, computer-based
> communication tool, the Internet represents an unparalleled opportunity for
> electronic collaboration between government departments and levels of
> government in the rationalization of the delivery of services.[1]

A number of initiatives such as Municom have since been introduced which have begun to

address this issue, and most major public sector organizations including larger

municipalities now have an Internet "strategy". However, as it becomes increasingly

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[1] Jim Carroll and Rick Broadhead, The Canadian Internet Advantage: Opportunities for Businesses and Other Organizations (Scarborough, ON: Prentice Hall Canada Inc., 1995), 134.

possible to deliver more processing capability and communications bandwidth to organizations and end-users, the vision articulated by Carroll and Broadhead could be realized in an even greater and profound way. The entire nature of interorganizational exchange could shift from the simple exchange of information and coordination of efforts to increasingly more complex forms of collaboration. Work-group computing and screen-sharing technology already allow colleagues to collaborate on documents in real-time, even over vast distances. Videoconferencing, a once prohibitively-priced technology which provides many of the same benefits as face-to-face meetings, is starting to appear on more end users' desktops.

Tapscott believes that the use of these new technological capabilities by individuals and organizations will result in the emergence of what he calls "networked intelligence".

> It (networked intelligence) is not simply about the networking of technology but about the networking of humans through technology. It is not about an age of smart machines but of humans who through networks can combine their intelligence, knowledge and creativity for breakthroughs in the creation of wealth and social development. It is not just an age of linking computers but of internetworking human ingenuity.[2]

4.3   New Models of Organizational Structure

Organizational theorists now speak of "virtual organizations" which do not exist in real space, as well as ad-hoc work-groups and task forces whose members never need to meet face-to-face. Although such radical realigning of organizational structure might seem implausible, most theorists do not suggest that the traditional organization has become entirely obsolete and will cease to exist. Rather, they suggest that we are beginning to

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[2] Don Tapscott, The Digital Economy: Promise and Peril in the Age of Networked Intelligence (New York: McGraw-Hill, 1996), xiv.

witness the break down in the traditional barriers to effective interorganizational

communication and coordination. As Ashkenas et. al. state:

> ...organizations should (not) immediately eliminate all external boundaries
> and form partnerships, alliances, joint ventures and collaborations with
> everyone around them. That would be chaotic and counterproductive.
> And it would negate the external boundaries' positive effects: a focus on a
> manageable (bounded) set of business competencies and priorities, and a
> sense of identity with others who share a common purpose. However, by
> making specific external boundaries more permeable, organizations can
> dramatically increase speed, flexibility, integration and innovation. In
> addition, the more that strategy, technology, management practices,
> resources and values flow back and forth naturally between organizations,
> the less necessity there is for crisis-generated breaches of the outer wall.[3]

Tapscott takes this concept one step further by linking it to information technology as an

enabler:

> Just as the walls within organizations are falling, so the walls among
> organizations are falling too. The result is what's been called the *virtual
> corporation*. Rather than staff up, you partner. You understand your core
> competencies and unite with companies having other talents. You forge a
> series of ever-changing alliances to achieve competitive success. Most
> advocates say that information technology is the most important enabler of
> such virtual structures.[4]

Essentially, these new models embrace the concept of smaller, more flexible structures

which are able to quickly realign in different combinations as dictated by the circumstances

of the current situation. Tapscott refers to this as the "molecularization" of the economy.[5]

Ashkenas et. al. see such organizations undergoing a shift in their operational processes

from "asset management" to "resource leverage".[6]

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[3] Ron Ashkenas, Dave Ulrich, Todd Jick and Steve Kerr, The Boundaryless Organization: Breaking the Chains of Organizational Structure (San Francisco: Jossey-Bass Inc., 1995), 192.
[4] Tapscott, op.cit., 85.
[5] Ibid, 51-54.
[6] Ashkenas et. al., op. cit., xv.

Osborne and Gaebler, writing about emerging structural alignments in public sector organizations, state:

> ...new kinds of public institutions are emerging. They are lean, decentralized, and innovative. They are flexible, adaptable, quick to learn new ways when conditions change.[7]

They see government becoming more of a catalytic agent, "steering rather than rowing"[8], echoing Ashkenas et. al.'s distinction between asset management and resource leverage.

The general observation of all of these authors is that traditional organizational structure is breaking down and favoring smaller, more responsive units which have distinctive strengths or competencies. This could have potentially significant implications for efforts at restructuring in the municipal sector.

4.4 Implications of New Technologies for Municipal Restructuring Initiatives

As described in the first chapter, Ontario's municipal sector is characterized by a large number of relatively small organizations. This has resulted in a number of attempts by the provincial government to systemically restructure the municipal sector by amalgamating municipal organizations to form larger, consolidated units. Municipal restructuring has recently come to the fore again with the recent passage of Bill 26, which contains provisions intended to expedite the restructuring process.

According to Tindal and Tindal, the emphasis of restructuring initiatives such as these has been largely misplaced since they have tended to be concerned with improving the

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[7] David Osborne and Ted Gaebler, Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector (New York: Plume, 1992), 2.
[8] Ibid, 23-48.

efficiency of service delivery while doing little to address issues of political representation. This has resulted in the creation of structures which have often been seen as more bureaucratic and less accountable than the structures they replaced, while doing little to improve their service delivery capacity.[9] They see defining municipal structures by their ability to directly provide a stable envelope of services as a dead-end solution since this will result in municipalities finding themselves increasingly unable to deliver those services in an environment of scarce resources.[10] Instead, they advocate a system where municipalities enter into partnerships with each other as well as other organizations including those in the private sector in order to ensure that needed services are provided to communities.[11] Their assertions are largely similar to Sancton's findings with respect to municipal structure in city-regions:

> When municipalities are seen primarily as service arrangers rather than as producers, then the problem of ensuring that their boundaries are optimal for the production of their mix of assigned functions becomes much less problematic. Municipal boundaries can then be used to delineate real communities, and optimal boundaries for service production can be worked out by other agencies and even by the private sector.[12]

It can be seen that many of the organizational structure issues surrounding Ontario's municipal sector are not unlike those that organizations in general are now facing, raising the possibility of information technology to act as an enabling agent in organizational restructuring. For example, if it is accepted that municipal boundaries should reflect real local communities and not optimal service delivery areas, then individual organizations will

[9] C. Richard Tindal and Susan Nobes Tindal, Local Government in Canada: Fourth Edition (Toronto: McGraw Hill Ryerson Limited, 1995), 9.
[10] Ibid, 11.
[11] Ibid, 9.
[12] Andrew Sancton, Governing Canada's City-Regions: Adapting Form to Function (Montreal: Institute for Research on Public Policy, 1994), 42-43.

have to enter into complex and often-changing agreements with other organizations in order to ensure the delivery of local services. Whereas such arrangements were once seen as messy and unworkable due to a lack of accountability, information technology allows complexity and frequent change to be controlled and made to function in accordance with societal needs. Consider what Naisbitt has said with respect to countries, although his words seem just as applicable to municipalities:

> We see that big companies work best, now that we have telecommunications, if divided up into autonomous small units. Countries, too, will work best that way. And now that we are becoming one world - the smaller the pieces, the better it will work. Computers allow us to organize and keep track of complexity, the complexity of having many small units - for companies and for the world.
>
> The breakup of countries (artificially put together) into national or tribal entities is surely as beneficial as the breakup of companies. It eliminates duplication and waste, reduces bureaucracy and promotes motivation and accountability, and results in self-rule (subsidiarity) at the most basic level - just like in companies.[13]

It is not inconceivable to imagine, in the very near future, an interorganizational network in the municipal sector that enables the creation of *virtual special purpose bodies*. These bodies could consist of staff and political representatives drawn from individual organizations who are able to collectively make decisions regarding the delivery of certain services or collaborate intensively on special projects while rarely, if ever, having to actually meet in person. These structures can also be of varying degrees of permanence, with no more overhead spent on an ad-hoc structure than a more enduring structure since a separate physical space with all of its associated costs is not required.

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[13] John Naisbitt, Global Paradox (New York: Avon Books, 1994), 39.

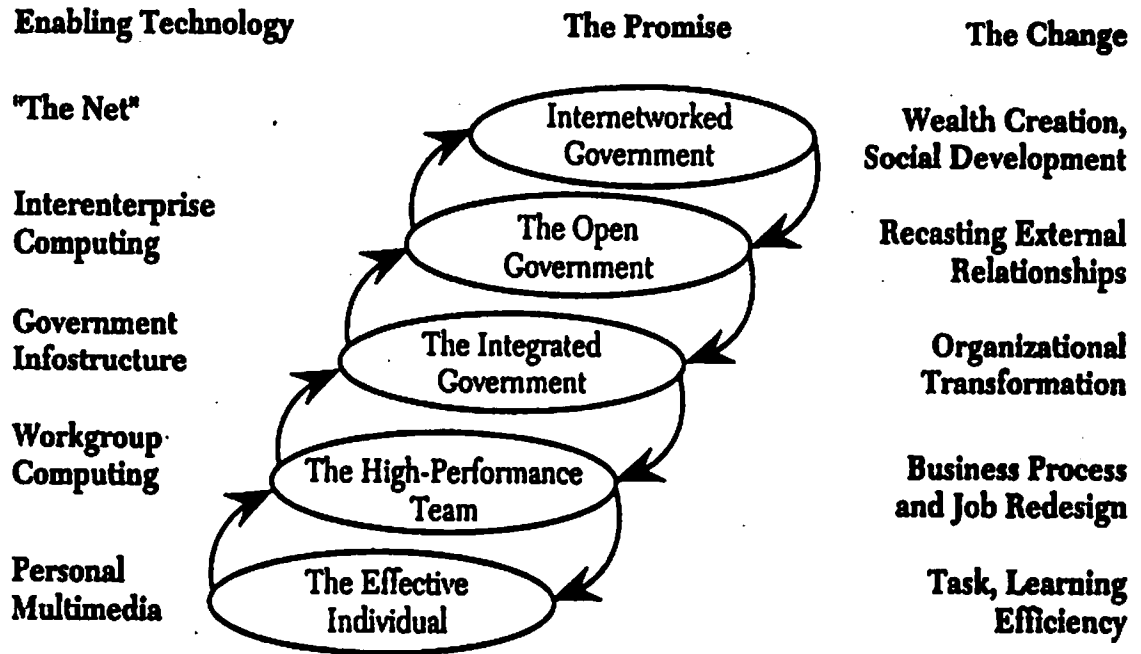This concept of intensive interorganizational collaboration is largely analogous to what Tapscott describes as "Internetworked Government", as depicted in Figure 2. Internetworked Government is seen as the final stage in a series of organizational structures made possible by the enabling power of information technology. At the most basic levels, personal multimedia enables the "Effective Individual", while workgroup computing enables the "High-Performance Team". Government infostructure enables the "Integrated Government", which learns to act consistently and cooperatively amongst all of its department or ministries. The "Open Government", enabled by interenterprise computing, has begun to share information electronically with its organizational partners. However, the Internetworked Government, enabled by power of "The Net", represents an entirely new organizational structure in which individual organizations work together in a far more integrated and seamless manner and traditional boundaries begin to blur.[14]

Rick Broadhead of Intervex Consulting already sees a transformation occurring in the way that organizations are doing business, and how technologies such as the Internet are contributing to this transformation.[15] Governments are now increasingly bringing in temporary workers on a project basis, calling in different experts as they are needed. He sees the government sector moving in the same direction as the private sector, implementing virtual organizational arrangements which are specialized in nature, temporary in duration, and oblivious to geographic boundaries.

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[14] Tapscott, op.cit., 164-166.
[15] Interview with Rick Broadhead, Consultant (Intervex Consulting) July 1996.

Figure 2

The Promise of Internetworked Government

Enabling Technology	The Promise	The Change
"The Net"	Internetworked Government	Wealth Creation, Social Development
Interenterprise Computing	The Open Government	Recasting External Relationships
Government Infostructure	The Integrated Government	Organizational Transformation
Workgroup Computing	The High-Performance Team	Business Process and Job Redesign
Personal Multimedia	The Effective Individual	Task, Learning Efficiency

Source: Don Tapscott, The Digital Economy: Promise and Peril in the Age of Networked Intelligence (New York, NY: McGraw-Hill, 1996), 164.

Another possibility, as organizations begin to go through the strategic planning process of determining what business they are in and what their core competencies are, is that they will begin to specialize in certain areas and then outsource that expertise to other organizations. For example, a municipal organization might be undertaking a special planning study on a certain land use issue such as commercial core revitalization or agricultural lands preservation. If it did not possess the necessary expertise in-house, it might opt to bring in expertise from another organization with a proven track record in that area, rather than go the traditional route and bring in an outside planning consultant. It could become possible to "borrow" the necessary expertise over large distances,

without requiring the experts to physically relocate to the area for the entire duration of the project. Certain individuals might simultaneously work on a number of projects for different organizations which are physically located vast distances apart.

While much of this might now seem extremely implausible given the relatively primitive capabilities of interorganizational networks such as Municom, the pace of change in information and communication technologies suggests that significant innovations are about to occur. Municipal practitioners and elected representatives need to be aware of what these changes are and how they will impact on their organizations. What will perhaps be of greatest interest to watch unfold is whether the current commitment to systemic restructuring of the municipal sector will be sustained, or whether the tide will eventually shift back towards encouraging smaller, community-based structures based on complexity and the enabling power of information and communication technologies.

4.5 Chapter Summary

Rapid advances in the use and availability of technology are beginning to change the way organizations interact and communicate. New applications are signaling a shift from simple information exchange towards more complex forms of interpersonal and interorganizational collaboration. At the same time, organizational theorists predict a shift in both the private and public sectors away from large structures towards smaller and more flexible structures, each with their own "core competencies". These smaller organizations enter into agreements, joint ventures and various alliances in order to

mutually achieve their organizational objectives, rather than each attempting to possess the full range of expertise and competence in their field.

In Ontario's municipal sector, restructuring initiatives in recent years have attempted to establish larger organizations which are each capable of efficiently providing the full range of municipal services demanded by residents and taxpayers. However, new information and communication technologies may signal an eventual return towards smaller, community-based municipal organizations. Such organizations could utilize the new technologies to forge alliances with other organizations which will ensure the provision of needed services while preserving the political accountability and community-based nature of local government.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Ontario's municipal organizations, operating within a sector dominated by a large number of small organizations, have traditionally interacted for a number of purposes, utilizing various mechanisms and communication media. The Municom Network could be an important addition for strengthening interorganizational relationships in the future.

The network, in its current form, provides a number of useful tools for direct interorganizational communication such as electronic mail, mailing lists and discussion groups. It also provides an efficient and powerful means of keeping municipal practitioners updated on events affecting their organizations. The aspect of the service which requires the most attention at the present time is its function as a central repository of municipally-related information for municipal research purposes.

The network's construction on TCP/IP, the globally-adopted platform for interorganizational networking, will ensure that it has the capacity to grow and develop in the future. Current theory suggests that interorganizational networks will evolve from being simple tools for the efficient exchange of information towards being the enabling technology for far-more complex forms of interorganizational collaboration. This has important implications for the municipal sector, which is being challenged to find new ways to deliver services and is now under intense pressure from the provincial government to restructure through amalgamation.

If information and communication networks can be deployed which allow for the redesign of business processes through complex forms of interorganizational collaboration, the rationale for systemic restructuring of the municipal sector could be brought into question. Interorganizational collaboration, in the form of partnerships with other municipal organizations, other levels of government, non-governmental organizations, and the private sector could allow municipalities to deliver needed services effectively and efficiently while continuing to remaining local in nature and politically accountable to the constituents they represent.

5.2   Recommendations

Association of Municipalities of Ontario

The Association should continue its efforts to address the currently identified shortcomings in the Municom Network, namely the quality and quantity of centrally stored information. If AMO strives to make the on-line resources truly comprehensive in scope, the network has the potential to become the indispensable resource which it is envisioned as. Elected representatives and staff most frequently want to be able to quickly know what their counterparts are doing. This sort of information already exists; converting it into a universally-accessible electronic format, however, will require a significant commitment on the part of the Association, its partners, and its constituent members.

From a technological perspective, Municom should not be seen as static, but rather a rapidly changing, dynamic technology. AMO should be alert to opportunities to strengthen the system through new capabilities that facilitate greater levels of

interorganizational exchange and shift the network's emphasis towards being a medium for active interorganizational collaboration.

Provincial Government

The provincial government, and in particular the Ministry of Municipal Affairs and Housing, needs to keep an open mind to the opportunities which new technologies are now making possible. The province should place more emphasis on promoting improvements and innovations in municipalities' business processes rather than preaching amalgamation as a cure-all to the resource constraints currently facing the municipal sector. Information technology, and the Municom network in particular, could play a large role in implementing these types of business process improvements. This will require a fundamental change, however, in how the province perceives it municipalities and in the autonomy it is willing to grant them in order to seek creative solutions to complex problems.

Individual Municipalities

Municipalities are already well aware of the constraints they face in a time of diminished resources. However, rather than resign themselves to functional obsolescence and await a provincially-imposed restructuring, they should be looking for ways to substantially improve their operations and processes. At this time, information technology seems to hold the most promise as a means of rapid and effective organizational change.

Improving operations and processes through technology will require a radical change in the ways in which municipalities perceive themselves and their relationships with other organizations. Organizations which were once able to take a very narrow or parochial

perspective in many cases will have to learn how to cooperate and collaborate with other organizations in order to survive and prosper. They can begin to do this by working in cooperation with AMO to make their knowledge and expertise available through Municom. Beyond this, they will increasingly need to be open to the possibilities of complex and dynamic forms of interorganizational partnering in order to realize mutual objectives and continue to meet the needs and expectations of their communities.

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Interviews

<u>Scott Andison, Manager of Operations (Municom Network)</u>. August 1996.

<u>Rick Broadhead, Consultant (Intervex Consulting)</u>. July 1996.

<u>David Furlong, Business Developer (Municom Network)</u>. June 1996.

<u>Ian MacKay, M.I.S. Service Coordinator (City of London)</u>. August 1996.

<u>James Schaefer, Treasurer (County of Wellington)</u>. August 1996.

On-line Documents

Note: The following documents were all stored on-line at the specified URL addresses as of the writing of this report. Access to documents contained on the MUNICOM server (www.municom.com) requires a subscription to the MUNICOM network.

About AMO. (http://www.municom.com/amohome/aboutamo.html)

About MUNICOM. (http://www.municom.com/about/about.html)

Applications/Contents Group. (http://www.municom.com/about/contents-group.html)

Benefits. (http://www.municom.com/about/benefits.html)

Communication Needs. (http://www.municom.com/about/comm-needs.html)

Connectivity Requirements. (http://www.municom.com/about/requirements.html)

Constraints and Specs. (http://www.municom.com/about/constraints.html)

Focus Group. (http://www.municom.com/about/focuc-group.html)

Information and/or Applications. (http://www.municom.com/about/info-applic.html)

Information Needs. (http://www.municom.com/about/info-needs.html)

Introducing MUNICOM. (http://www.municom.com/municom_alert/introducing.html)

The Making of a Network. (http://www.municom.com/municom_alert/making.html)

Municipal Data Sources. (http://www.municom.com/about/data-sources.html)

Network Capabilities. (http://www.municom.com/about/network.html)

Network Capabilities. (http://www.municom.com/about/network-capabilities.html)

Network Research. (http://www.municom.com/about/network-research.html)

Public/External Access. (http://www.municom.com/about/public.html)

Staff/Internal Access. (http://www.municom.com/about/staff.html)

Total Solution. (http://www.municom.com/about/total_solution.html)

APPENDIX 1

Internet Addresses of Selected Local Government Resources

Association of Municipalities of Ontario:
http://www.amo.on.ca

CivicNet (British Columbia):
http://civicnet.gov.bc.ca

Federation of Canadian Municipalities:
http://www.fcm.ca

FinanceNet:
http://www.financenet.gov

Local Government Home Page:
http://localgov.org

Local Government Institute at the University of Victoria:
http://www.hsd.uvic.ca/PADM/research/lgi/lgi.htm

LGNet (Local Government Network):
http://www.ig.org

LoGON (Local Government On-line):
http://www.hemming-group.co.uk

Maritime Municipal Training and Development Board:
http://www.cfn.cs.dal.ca/Government/MMTDB/mmtdb-intro.html

Municipal World:
http://www.municipalworld.com

Municom Network: (requires subscription)
http://www.municom.com

Worldwide Local Government Web Page:
http://world.localgov.org