# The Broadband Properties Magazine

# Top 10 MDU Pioneers for 2007

## BBP recognizes some of the virtuosos who have championed FTTP for multi-tenant environments

A BBP Staff Report

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|---|---|---|
| John Campbell | Waterfront Toronto | www.towaterfront.ca |
| Clifford Clarke | City of Fort Wayne | www.cityoffortwayne.org |
| Lev Gonick | OneCommunity | www.onecommunity.org |
| Herb Hauser | Midtown Technologies | www.midtowntechnologies.com |
| Jim Hayes | The Fiber Optic Association | www.TheFOA.org |
| Larry Irving | Internet Innovation Alliance | www.InternetInnovation.org |
| Nicol Lee | One Economy Corp. | www.one-economy.com |
| Joe Mefford | ConnectKentucky | www.connectkentucky.org |
| Steve Mouzon | The New Urban Guild | www.newurbanghuild.com |
| Mike Whaling | InfiniSys Electronic Architects | www.electronicarchitect.com |

Fiber has started to penetrate the MDU market in major ways, as technology options have improved and as North American demographics favor it. Empty-nester baby boomers as well as young professionals are snapping up condominiums, while rising mortgage rates have made renting a necessity for a larger percentage of the population.

High energy prices and the specter of global warming have also renewed interest in curbing suburban sprawl, with its long commutes and its car-oriented culture. And of course, MDUs tend to be far more energy-efficient than single-family detached housing, even when they offer similar space and amenities.

Residents want broadband. As in Asia, this does not always mean fiber to the unit. It can mean fiber to the basement or fiber to the floor. MDUs are not always urban, either. They have made inroads even in rural areas. One of our honorees, from ConnectKentucky, helps gather data and make business cases for broadband all over his state, but notes that enormous progress has been made in rural counties.

As the population ages, property owners and managers have also begun to market dwelling units that offer telemedicine, enhanced security and telepresence so that children can check up on their parents and grandparents can keep tabs on their children's children.

Without the work of the 10 pioneers honored this year – and the 40 we honored last year – the MDU broadband revolution would probably have been delayed. It is their vision, their appetite for risk and the pioneering projects they undertook over the past few years that set the stage for this year's builds.

They tell us they make their choices by:

- Listening to what customers – residents – want.
- Finding reliable contractors and technology partners.
- Listening to those contractors and vendors to see what's possible.
- Looking just far enough ahead to keep from installing obsolete plant, but not so far as to overspend on technology.
- Making a move when equipment becomes standardized enough to keep from being locked into proprietary technology.

It seems simple enough, but the day-to-day attention to detail needed to run a property – whether you're in charge of fixing the roof or rolling a video technician's truck – mitigates against innovation and courage. Not for the people listed here, however.

How did we choose them? Well, we talked a lot about them among ourselves. And we also asked some of them. A consensus emerged. When we first started looking for such pioneers (for our May 2006 issue) we quickly realized we had focused too narrowly on property owners and operators themselves. Suggestions came from those folks, of course, but also from the legal, technical, and even academic communities.

This is not a list of our advertisers, but more a list drawn from our readers. It is a list of individuals, so as happened last year we ended up in a few cases honoring several people from the same organization.

We list them alphabetically by name, and mention their affiliations only in small type. There are some CEOs on the list, but not many; we were looking for individual vision. We also cut the list back in part by excluding many people we'd honored in the past.

Here's the bonus: As long as we were honoring them, we asked for their advice and their predictions for the near-term future. We've digested their comments below. We think you will agree that their advice compares favorably with that of the typical business consultant.

We've also invited some of them to speak at our Broadband Summit in September – and we're happy to say those invitations have been accepted.

Do you know of people we've missed? Send their names and contact information to steve@broadbandproperties.com.

For advice and predictions from last year's honorees, see www.broadbandproperties.com/2006issues/may06issues/Top40_May.pdf

## John Campbell
## President and CEO, Waterfront Toronto
## www.towaterfront.ca

Waterfront Toronto is the master planner and master developer for the revitalization of Toronto's waterfront. This is a $17 billion, 25-year project involving 200 acres next to the downtown of Canada's economic capital.

Economic development and job creation are two key goals for this revitalization. "Three years ago at a meeting of the Intelligent Community Forum in New York I became impressed with the economic development and job creation results achieved by the world's leading intelligent communities," said Campbell. "For that reason our Waterfront revitalization includes a strategy for implementing one of the world's leading intelligent communities as one of the dimensions of our new communities on the Waterfront. We call it i-Waterfront and its foundation is fiber to the premises, FTTP, for all residents, business, institutional and other commercial tenants."

**Advice:** We have become convinced that an intelligent ultra-broadband infrastructure is an important foundation. But perhaps even more important is the idea of open access for content and services. Community and social innovation seem to flourish, in addition to business and product innovation, when an open access strategy is pursued. The implementations of e-health, e-education, e-entertainment, e-innovation and community collaboration become very successful.

## Campbell: "We have become convinced that an intelligent ultra-broadband infrastructure is an important foundation. But perhaps even more important is the idea of open access for content and services."

**Predictions:** The cost of the infrastructure will continue to decline, demand for bandwidth will continue to grow and the wave of new implementations of FTTP will continue to grow. The concept of "Future Proofing" the design and implementation of the infrastructure will be important.

## Clifford Clarke
## Chief Information/Technology Officer,
## City of Fort Wayne
## www.cityoffortwayne.org

To learn about smart home technology in Fort Wayne, see:
www.cityoffortwayne.org/index.php?option=com_content&task=view&id=1205&Itemid=1209
For information about Fort Wayne's downtown WiFi:
http://www.cityoffortwayne.org/index.php?option=com_content&task=view&id=1089&Itemid=1214

A key part of Clarke's responsibilities is to optimize use of Fort Wayne's broadband infrastructure. The city seeks to effectively and efficiently connect citizens, businesses, and government agencies. "High-capacity broadband infrastructure like fiber will be the conduit for the delivery of future applications," he says.

**Advice:** Broadband infrastructure must be viewed as a utility, not an option. Communities without broadband will miss out on the next wave of economic development. Residents and businesses now demand to be connected. Homes of the future must be reconfigurable, with Internet access throughout the home and not just in the bedroom, living room or office, and they must be serviceable by a variety of providers.

## Clarke: "Residents and businesses now demand to be connected. Homes of the future must be reconfigurable, with Internet access throughout the home and not just in the bedroom, living room or office, and they must be serviceable by a variety of providers."

**Predictions:** High-capacity broadband (at least 5 Mbps or greater) will be as ubiquitous as indoor plumbing. Applications yet unimaginable will be commonplace. Broadband will have a greater influence on economic development, public safety, health care, transportation, education, social services, and government services. The government will expect to use broadband applications as a way of reducing the cost of moving resources around.

Citizens and businesses will expect broadband. It will be table-stakes. Broadband will be required to transport the applications citizens and businesses want like customizable entertainment content, video teleconferencing, and media-rich searches. Citizens and businesses will move to communities where the broadband exists.

# Lev Gonick
## Founder, OneCommunity
## www.onecommunity.org

Gonick is chief information officer at Case Western Reserve University. He's also founder and founding Board President of One-Cleveland, now known as OneCommunity. OneCommunity is a community-based regional ultrabroadband effort in northeast Ohio. More than 350 nonprofits, schools, governments, healthcare organizations, libraries, public broadcasters, museums and universities with almost 1 million users are connected to its switched gigabit (MPLS) network. There are more than 5000 wireless hotspots in the region and several mesh wireless projects covering several dozen square miles.

In addition, OneCommunity is developing a national center of excellence in cooperation with community and national foundations interested in a portfolio approach to leveraging ultrabroadband technologies to advance community priorities.

**Advice:** The average broadband download speed in the US is only 1.9 Mbps, compared to 61 Mbps in Japan, 45 Mbps in South Korea, 18 Mbps in Sweden, 17 Mpbs in France, and 7 Mbps in Canada. The United States should set a 2015 goal of a symmetrical national optical networking fabric based on 1 Gbps to the faceplate at the edge of the network and terabit+ using future DWDM (dense wave-division multiplexing, to increase bandwidth by transmitting more wavelengths of light on the existing fiber) technologies to enable the quilt of regional optical networks to connect to each other.

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Within the regions, I look to seeing a limited set of policies and practices in enabling these multi-sector regional optical networks (M-RONs). I think OneCommunity represents the long-term "best choice" in support of the public interest.

**Predictions:** In five years, the quilt of regional fiber optical networks will become the backbone for a national fabric that will need to focus on the "edge" of the network. In my view this can be seen as both a national policy imperative around competitiveness and position in the hierarchy of the emerging 21st century economy as well as opportunities to enable regional differentiation in a "flat world."

If the United States is to compete in the 21st century, and if we are to enjoy continued general high standards of living as a nation, and our cities are to be the source of good jobs, clean environments, and vibrant culture, we need to realize that we do not have the luxury of a 10-year debate nor can we embrace a strategy in which we imagine a battle of the titans leading to a "winner-take-all" cage match. The stakes for our future are way too high to allow the narcissistic, hedonistic, mean, and selfish tendencies (to paraphrase F. Scott Fitzgerald) of either the private operators or the stewards of public government assets.

Our call for a "third way" is an attempt to layer community and cooperatively owned and operated optical networking platforms as integral parts of (but not separate and apart from) the capacity of private and public sector investment in a common portfolio approach to our future. Indeed, the future of every community – whether it is an older city like Cleveland or a new city in the desert like Tucson – is inextricably linked to our leveraging a cross-sector portfolio approach to ultra-broadband and tying those investments directly and explicitly to community priorities.

## Herb Hauser
## President, Midtown Technologies LLC
## www.midtowntechnologies.com

Hauser's company is setting new standards for equipping MDUs. Even the lights in his latest buildings can be brightened remotely to compensate for aging eyesight. Says Hauser, "I have the privilege of directing and working with a group of young men and women who are literally cutting new trails in the unexplored world of broadband connectivity and applications."

**Advice:** First, broadband on fiber is intimately linked to the speed of light; we have yet to achieve its full capacity. Second, where there are photons there are electrons; fiber and power cannot be separated. As the demand for photons increases, so will the demand for power. Thus we must create energy-efficient ways for broadband to be carried on fiber optics. Currently our team is working on a model for this at one of our developments, Steel Point Harbor in Connecticut.

At a minimum, no matter what you are doing with regard to infrastructure, make sure you have established routes to add fiber or use it in current applications. Equally important, everyone who uses fiber should be converging applications on a single infrastructure. We at Midtown Technologies envision a time when fiber networks will be ubiquitous and the individual network will resemble the highly evolved and highly successful mammalian spinal column, which is made up of thousands upon thousands of "biological fiber cables" that perform tens of thousands of activities simultaneously.

## Hauser: "We envision a time when fiber networks will be ubiquitous and the individual network will resemble the highly evolved and highly successful mammalian spinal column, which is made up of thousands upon thousands of 'biological fiber cables' that perform tens of thousands of activities simultaneously."

**Predictions:** First, I believe that soon we will be bandwidth starved. When that happens, the final migration from the copper-based world of the past will begin. Instead of touting how many Mbps they deliver to homes, the next generation of broadband service providers will need to talk about how many Gbps they deliver.

Second, while wireless will always be a convenience that we are happy to have, in the end the heavy lifting of the broadband age will come from fiber. This will become very apparent with the advent of 3D movies and video programming.

## Hauser: "Instead of touting how many Mbps they deliver to homes, the next generation of broadband service providers will need to talk about how many Gbps they deliver."

# Jim Hayes
## President, The Fiber Optic Association
## www.theFOA.org

The FTTx resource page is at www.thefoa.org/FTTX/

The FOA, as the professional society of fiber optics, is dedicated to promoting the use of fiber by educating users and technicians at more than 170 approved schools, certification of installer skills and knowledge, and assisting users to find and hire educated and certified technicians.

Hayes says he can't take all the credit. "It's deserved by the FOA and its directors, members and associated training organizations," he insists.

**Advice:** In a panel discussion with an independent telco group last year, we all decided that "sooner or later, you're going to install fiber to the home." Better sooner!

The biggest deterrent to expanding FTTx coverage is no longer technology or cost, it's finding enough qualified and certified technicians to connect millions of homes annually. Promoting fiber optic training at local schools, even down to the high school level, is the only way to ensure adequate numbers of trained technical people.

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**Predictions:** The future of fiber is becoming more promising as alternative broadband connections encounter glitches. Fiber is the only unlimited broadband connection that can be implemented without caveats. Next we have to focus on the distribution of these broadband signals within the home or multiple dwelling units, because the use of this bandwidth depends on distributing it within the home. The FOA and the Structured Cabling Association (www.scausa.org) are cooperating on a program to educate builders and property owners on how to provide those connections and how profitable it can be for them.

# Larry Irving
## Co-chair, Internet Innovation Alliance;
## President and CEO,
## The Irving Information Group
## www.InternetInnovation.org

As co-chair of the Internet Innovation Alliance (IIA), Irving works closely with a wide range of companies, trade associations, think tanks, and nonprofit, educational and labor organizations to promote greater investment in and development of broadband technologies.

In recent months, IIA has sought to increase the awareness among policymakers and the American public of the coming "exaflood" of data that will traverse broadband networks. The term "exaflood," in Irving's words, "refers to the torrent of information that crosses the Internet today and the expected exponential increase in data on the Internet due to bandwidth-intensive video, audio and photo applications in the very near future."
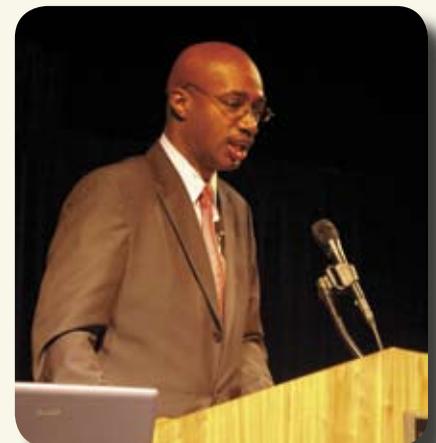
**Advice:** The global investment in fiber optics over the past decade is beginning to pay off as application providers increasingly develop applications that will ride over available fiber platforms. The incredible increase in the use of the Internet for streaming video and related applications simply would not be possible if not for the fiber backbones that traverse our nation and the globe. The Internet spawned e-mail as the first killer application. Fiber and other broadband technologies are spawning the next and newest killer applications, based on video.

I advise my colleagues, clients, friends and now your readers to rethink all of their assumptions about how much capacity they will need in their Internet or IT infrastructure. Just as, to my knowledge, few if any analysts accurately predicted how rapidly the Internet would become an essential part of American life and global business, few analysts, again, in my opinion, accurately are anticipating the enormity of the coming exaflood.

### Irving: Prepare for the exaflood. "I advise my colleagues, clients, friends and now your readers to rethink all of their assumptions about how much capacity they will need in their Internet or IT infrastructure."

Additionally, property owners seem to be underestimating the need for investment to handle the increased bandwidth-intensive traffic that soon will be criss-crossing networks. Think of it this way – when a parent buys clothing for a growing child, they may buy a shirt or pants a size bigger to allow for growth. Similarly, property owners, when investing in broadband infrastructure, should anticipate enormous growth in (and appetite for) bandwidth.

**Predictions:** First, I believe that the coming exaflood will, like the general adoption of the Internet over the past decade, far outstrip even the most optimistic predictions in the near-term future. Second, the next generation of applications will combine the three concurrent revolutions of capacious Internet bandwidth, high-resolution imaging and mobility enabled by wireless broadband technologies, both within and outside of buildings and corporate and academic campuses. The combination of those three technological revolutions will be the drivers of the exaflood and will result in, at least, a 50 to 100 megabit Internet, within five years.

## Nicol Lee
## Vice President, Digital Inclusion
## One Economy Corporation
## www.one-economy.com

One Economy Corporation is a multinational nonprofit organization whose mission is to maximize the potential of technology to help low-income people improve their lives and enter the economic mainstream. Dr. Lee is responsible for working with housing developers, property managers, municipal officials and civic leaders to bring broadband to the homes of low-income people and for the Beehive www.thebeehive.org, a multilingual web portal that connects these families to information about the issues that matter most to them: health, money, jobs, education and family.

"One Economy serves as the nation's major connector between low-income people and the telecommunications and technology industries. We are catalyzing broadband solutions around the country for developers, public housing authorities, nonprofits, Native American tribes and municipalities. The robust bandwidth afforded by fiber optics can connect people of all incomes to the best of what the Internet has to offer," she says.

**Advice:** When providing broadband access, the critical focus should be on individuals whose social or economic constraints limit them from realizing the long-term power of technology and its potential impact on their lives. Residents, especially low-income residents, should have convenient, affordable broadband Internet access, ultimately in their homes.
In addition to affordable computer hardware options, online content such as the Beehive must be available to deliver vital public services and information, and to flexibly respond to the diverse needs and aspirations of a multicultural population. When the

housing, government, nonprofit and telecommunications sectors join together around digital inclusion, the impact on the underserved is profound because ubiquitous access contributes to increased economic opportunity and civic engagement for people who had been disengaged.

**Predictions:** In the next five years, technology standards will continue to evolve. What is considered fast today will be slower tomorrow when we look at broadband and hardware solutions. Our world expects this type of change. What will be different in the future is that access to broadband will no longer be a privilege for those who can afford it, but rather a civil right guaranteed to all citizens. Broadband will rapidly become available where people live, regardless of their socioeconomic status. Affordable housing will serve as an example of digital inclusion as residential broadband infrastructure is financed into the construction of all government-subsidized housing, with the recurring monthly costs of the access funded in the housing's operating budget, like landscaping or security. Online content sources like the Beehive will become major drivers for how ordinary people make extraordinary, life-changing decisions about their finances, education and health. More telecommunications providers will invest in untapped markets, working alongside nonprofits like One Economy, to prepare low- and moderate-income people for full engagement and appreciation of broadband and all of its benefits.

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## Joe Mefford
## Statewide Broadband Project Director,
## ConnectKentucky
## www.connectkentucky.org

For a description of the broadband initiative see connectkentucky.org/projects/pfi/default.htm

Joe Mefford is a private consultant managing ConnectKentucky's efforts related to Kentucky's Prescription for Innovation, a comprehensive broadband deployment and adoption plan that leverages state, federal and private investment to blanket Kentucky with high-speed Internet access. The plan uses a GIS-based inventory of existing broadband infrastructure and service availability. His expertise spans more than thirty years in telecommunications at Bell South and AT&T, and as Chief Information Officer for Kentucky League of Cities.

**Advice:** There is no question that the optimum delivery platform for broadband is fiber optics. However, that platform is some years away for many rural areas. Household density is the key indicator for investment strategies of providers.

The statewide broadband project in Kentucky has taught Connect Kentucky how to be innovative in closing the digital divide gaps by using all broadband technology platforms. In Kentucky, during the past two and a half years broadband availability to households has increased from 60 percent to approximately 95 percent through private investment of over $675 million. The remaining 5 percent of unserved areas will be requiring unique public/private partnerships to offer broadband. This will mean a minimum use of satellite broadband to get us to 100 percent household coverage.

Just as water and sewer access is critical to investment decisions, broadband availability has become equally important. Property buyers are now asking, up front, what sort of broadband access is available before making purchases. Therefore, local officials and developers need to insure readily available broadband access if they desire community and economic development success. It is a key utility for delivery of education, healthcare, government services and entrepreneurial opportunity.

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**Predictions:** Many states are now on target to move to full broadband coverage over the next three to four years. Kentucky will be at 100 percent availability by the end of 2007 and has become a national model for other states. I believe the evolution of broadband technology will be a mobile wireless overlay in communities. The primary driver for wireless will be for public safety. However, this overlay will also provide a platform for many applications in government services, as well as mobile applications in the private sector. Multiple layers of broadband technology will make communities more attractive as places to live, work and raise families.

## Stephen A. Mouzon, AIA CNU LEED Principal, The New Urban Guild www.newurbanguild.com www.katrinacottages.com

"My specialty," Mouzon says, "is helping to create great places that require broadband; I'm not a technical expert." "New urbanist" communities are pedestrian-oriented and encourage mixed use. They make it easy for residents to work from home, and typically feature good networks, including wireless access. The New Urban Guild acts as an agent for architects who perform a number of services for developers and builders in the interest of building great places. Mouzon has developed an innovative system of Architectural Plan Review that teaches builders, designers and architects traditional principles of good design rather than simply telling them where to fix a drawing.

**Advice:** Promote everything you do within the context of the New Urbanism. Immediately discard the notion that place doesn't matter. Place matters immensely to the Creative Class, which can be your biggest customer by far. Set every ad in a New Urbanist development from now on; there's a wide range to choose from, from the sleepy country hamlets to hopping downtown infill.

**Prediction:** Within ten years, the New Urbanism will be the normal way of developing in America. You can make it happen faster if you can deliver the workplace to the home. Do so, and we'll then deliver the workplace to the neighborhood, which is where the workers want to be.

## Mouzon: "Within ten years, the New Urbanism will be the normal way of developing in America. You can make it happen faster if you can deliver the workplace to the home."

## Mike Whaling
## Partner and Business Development Manager, InfiniSys Electronic Architects
## www.electronicarchitect.com

Blog: Multifamily Technology 360° at mdutech.blogspot.com

Mike provides strategic direction to property owners, service providers and colleagues regarding technologies that benefit multifamily communities and residents. He says his specific role "is to provide property owners with effective solutions for their residents' needs, and to provide technology firms with insight to create products and services most applicable to this unique market."

He says, "Developers looking for sustainable technology solutions need fiber. The capabilities and long-term economic benefits of fiber make it an ideal option, especially now that high-performance buildings have become a leading issue in the development industry (and among consumers in general)."

**Advice:** Providing high-quality connectivity options creates incredible opportunities for communities and property owners to cost-effectively deliver more personalized, and completely new services to their residents. When we think beyond the bandwidth to focus on the applications that can be delivered over a community network, cities, developers and residents will all reap the benefits. Providers that can support these value-added applications will be rewarded with repeat business.

Competition among service providers is increasing in many local markets, and competition is also receiving strong support from federal and state regulators. Therefore, real estate professionals need to determine how to provide an appropriate level of choice for their residents without incurring excessive network infrastructure expenses. At the same time, owners should evaluate how this trend – and related price wars and consumer-driven innovation – will impact their "technology amenities" packages. Make sure the property's systems and infrastructure can enable residents to access the services they want and expect.

**Predictions:** Residents and property staff are increasingly sophisticated in their use of technology, but the demand for "Geek Squad-type" tech support will continue to increase as more high-tech gadgets enter the home and become essential parts of our everyday lives. This trend has the potential to significantly affect the operating income of owners that do not already have a plan in place to address these issues. The digital divide between new and existing communities will get wider. The major service providers will likely provide some help, but it's going to take time before many property owners come to grips with the real costs of preparing older properties for an upgrade to fiber or even to newer cable or satellite solutions.

## Whaling: "The digital divide between new and existing communities will get wider. The major service providers will likely provide some help, but it's going to take time before many property owners come to grips with the real costs of preparing older properties for an upgrade to fiber or even to newer cable or satellite solutions."

Energy-efficient systems and digital technologies will become increasingly intertwined. A building's technology infrastructure will have an increasingly significant impact on the real-time management and conservation of energy and other resources.