

The background of the cover features a composite image of a globe, a person in silhouette reading a newspaper, and a digital data stream with green binary code and text fragments like 'VOC&cd', 'TEC', 'DOBEP', 'drive', and 'of'.

ICT TECHNOLOGIES TRENDS and TOPICS for 2016

In This Issue . . .

Feature Articles

- 4 Telco Data Centers: Opportunities in Moving Data and Services Closer to the Edge
By Timothy Downs, Interwork Media
- 6 TIA: Top Telecom Trends
By Limor Schafman, TIA
- 10 Critical Infrastructure Communications Networks
By Bobbi Harris, UTC
- 12 Fiber to the School
By Timothy Downs, Interwork Media
- 23 Happy Anniversary '96 Telecom Act
By Walter McCormick, US Telecom
- 24 Competition Policy Marches Forward in 2016
By Chip Pickering, INCOMPAS
- 30 Staffing Your Organization for Telco Innovation
By Prayson Pate, ADVA Optical Networking

Resource Articles

- 9 Increase Density While Reducing Cost
By Pat Thompson, CommScope
- 14 The Programmable, Disaggregated Network
By Steve Pelosi, Fujitsu
- 16 Customer Benefits Through Automation
By Juniper Networks
- 19 Deploying 10 Gigabit Access Networks
By Robert Conger, ADTRAN
- 27 Getting More Out of the Hosted Telephony Explosion
By Patrick T. Sheehan, Mitel
- 28 Your Dark Fiber Should Not Be Dark To You
By Jim Theodoras, ADVA Optical Networking

Walker News

- 34 In the Spotlight
- 37 Recognizing Excellence
- 38 Upcoming Events

Letters to the editor may be sent to SWEditor@walkerfirst.com

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Editor's Letter

In preparing for this issue, I dug through a bookcase and located the 10th Edition of Newton's Telecom Dictionary, once considered an essential resource for those of us working in Inside Sales at Walker and Associates. It was published in 1996, the same year the Telecommunications Act of 1996, became law. In many ways it is hard to believe 20 years have gone by since that historic, game-changing piece of legislation was passed. What is most difficult to imagine, however, is just how much our industry has changed in those 20 years.

For example, reviewing the resource mentioned above, it is interesting to note the terms not included. Keep in mind that this book was 1320 pages, but didn't include a single reference to voice over IP. The term IP, in fact, received not much more than a footnote, with no reference of it as a potential vehicle to carry voice. And the definition for "gigabyte" only described how many bytes that includes. It nearly laughs at the idea of that much data, stating "That's enough space to hold 200 copies of this dictionary." How far we've come considering today's movement toward gigabit broadband services, a subscriber base now forecasted to exceed 100 million users by 2020.

With this anniversary in mind, it is particularly fitting that we included an article written by Chip Pickering, CEO of INCOMPAS. While serving as a staff member with Sen. Trent Lott (R-Miss.) he served as a staff member on the Senate Commerce Committee, where he helped shape the Telecommunications Act of 1996. Because of his role in drafting the 1996 Act, he subsequently became well known as a Congressional leader on telecommunications issues. That background gives him a unique perspective on the topic of competition today, which the 1996 Act was in part designed to define and protect.

Along with the technology changes currently underway, the expanding scope of broadband delivery is an ongoing challenge for today's carriers. ICT services are no longer limited to traditional carriers, but now include opportunities in multiple markets. This is especially true for utility carriers, as described in Bobbi Harris's article on page 10.

For this issue, we wanted to cover a wide range of topics, mainly because we know more than one thing keeps our carrier customers up at night. Increasing competition, technology shifts, regulatory changes, rising consumer expectations, evolving definitions of broadband, funding sources and more - it just doesn't seem to stop. With that in mind, we cast a wide net toward our Skinny Wire contributors, asking them to write about what they view as most important topics, trends and technology facing the ICT industry. We expect you'll find this a valued resource as you navigate 2016.

Now, I need to put the Newton Telecom Dictionary back on the shelf. Some relics are worth holding onto.

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Critical Infrastructure Communication Networks Provide the Lifeblood of Smart Communities

By Bobbi Harris

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Near the end of 2015, the White House announced a new smart cities initiative, [Envision America](#), which will invest over \$160 million in federal research and leverage more than 25 new technology collaborations. The goal of Envision America is to help communities confront key challenges such as reducing traffic congestion, fighting crime, fostering economic growth, managing the effects of a changing climate, and improving the delivery of city services. One key technology will be crucial to the success of the smart cities initiative – real-time, two-way communications networks.

The Information Communications Technology (ICT) marketplace will once again be called upon to deliver the most reliable, scalable and efficient communications technologies to meet these smart city challenges. Electric, water and natural gas utilities are leading the charge in many areas by upgrading their own operations, providing rural broadband to the home, coordinating joint-use and rolling-out data-packet IP communications networks. By casting a stronger communications net, these critical infrastructure providers are quickly becoming the backbone of all things smart.

At UTC, utilities and technology members collaborate to tackle a wide range of challenges, from new regulations and investing in infrastructure to filling open technology jobs and bolstering community advantages while advancing science and technology to accelerate these efforts. Working alongside civic leaders, data scientists and technologists, utilities are joining forces to build these “Smart Communities.” Communications suppliers, whether public carriers or primary-use spectrum providers, are being challenged to add new devices and faster data speeds.

There is great opportunity for the ICT marketplace within the Envision America framework, including new revenue streams, partnership opportunities and advancing new technologies. Utilities and city leaders are in need of credible information about technology solutions. ICT providers should step into the spotlight



“... NIST plans to invest \$5 million in Smart Cities in 2016...”

in 2016 to investigate participation in Envision America collaboration and highlight their solutions for smart communities. [Facts about the Envision America](#) investments include:

- More than \$35 million in new grants and over \$10 million in proposed investments to build a research infrastructure for Smart Cities by the National Science Foundation and National Institute of Standards and Technology.
- Nearly \$70 million in new spending and over \$45 million in proposed investments to unlock new solutions in safety, energy, climate preparedness, transportation, health and more, by the Department of Homeland Security, Department of Transportation, Department of

Energy, Department of Commerce, and the Environmental Protection Agency.

- More than 20 cities participating in major new multi-city collaborations that will help city leaders effectively collaborate with universities and industry.
- Ten cities will be chosen based on their goals, collaboration with local organizations and commitment to developing and planning for a smart city. The cities will then participate in a 3-day workshop to begin planning, with private sector partners staying involved throughout the year to support the implementation of their plans.

Like the ARRA funding from 2009, the Envision America funds will not reach

all communities, so those not chosen will need creative financing options. However, also just as with the ARRA funding, this initiative should heighten the focus on proven solutions from ICT providers. UTC has launched a new [community of communities called NetWorks](#),



which provides another collaboration channel for members in addition to its conferences and other educational activities. UTC members can privately discuss Envision America initiatives, as well as federal and state regulatory challenges, technology successes, best practices in operational efficiencies, etc.

Communities across the country are building systems of continuous improvement for the collection, aggregation and use of data to improve the life of their residents by harnessing the growing data revolution, low-cost sensors and research collaborations. These systems require the highest cybersecurity to protect safety and privacy of individuals and organizations. The National Institute of Standards and Technology (NIST) cybersecurity framework created by Executive Order (EO) 13636-issued February 12, 2013- is tasked with developing a voluntary cybersecurity framework. The Framework would apply across the critical infrastructure sectors and provide a “prioritized, repeatable, performance-based, and cost-effective including security measures and controls, to help owners and operators of critical infrastructure identify, assess, and manage cyber risk.” This too is a great opportunity for ICT solution providers – NIST plans to invest \$5 million in Smart Cities in 2016 and is launching a new round of the Global City Teams Challenge. (AT&T announced that it will support Internet of Things and Smart Cities technology adoption by supporting testbeds in cities in the U.S. and globally. AT&T will select 10 U.S. cities to deploy technology for smart metering, lighting, traffic management, parking, and public safety. The company will host a Smart Cities hackathon with NIST participation at the

AT&T Developer Summit in January 2016 with participating cities.)

The ICT market should put plans in place to seize these opportunities and collaborate with organizations such as UTC and with federal agencies included in the Envision America initiative.

For more information on UTC's efforts, or opportunities to participate in any of UTC's programs, please contact us at membership@utc.org.



A smart water and smart city industry expert with more than 15 years of experience, Bobbi Harris is the VP of Market Strategy & Development at UTC. In her years as a global strategic marketing professional, she has focused on environmental issues and sustainability technologies to address water and energy challenges including smart water infrastructure, smart grid, cleantech and green building initiatives. Ms. Harris is also founder and CEO of [Smart Water, Smart City, LLC](#) and a leader in market analysis, strategic intelligence and technology assessments. Her insights are sought by key stakeholders, including the U.S. Conference of Mayors, National Association of Regulated Utility Commissioners, National League of Cities, and electric, water and natural gas utility leaders and technology executives worldwide. Bobbi serves on the advisory boards of the [Research Triangle CleanTech Cluster](#) and [Energy Central's Smart City Community](#). She is an active member of the [Women's Council on Energy and the Environment](#), and [Clean Energy Education and Empowerment](#). Ms. Harris graduated summa cum laude from Campbell University, earned her MBA from the same.