The Institute for Communication Technology Management (CTM)

A Center of Excellence at the USC Marshall School of Business

2014 - 2015 Overview

USC University of Southern California
CTM: The Future of the Industry Happens Here


Disruptive technologies, new consumer habits, and emerging business models have transformed the communications value chain from device makers and network service providers to content creators and beyond. The increasingly connected consumer and workplace presents incredible opportunities if key challenges can be addressed.

The Institute for Communication Technology Management [CTM] is a center of excellence within USC’s Marshall School of Business. It provides research, educational programs, and forums focused on the rapidly evolving communications, technology, and entertainment sectors. Founded in 1985, CTM is known by business leaders as a forward-looking, impactful source of thought leadership.

The Institute is also a powerful connector of decision makers in the industry. Our board members represent over 20 companies representing multiple industry sectors. Professionals participating in CTM programs provide valuable insight and help drive innovation across the larger digital communications ecosystem.
A Unique Consortium

CTM’s is supported by over 20 global corporations that shape the digital landscape. CTM member companies receive a seat on our Board, joining a collection of thought leaders and decision makers from across the digital value chain. Our board members meet in person twice per year and attend CTM’s Executive Roundtable – an invitation-only, off-the-record, mini-conference where participants discuss and debate the key trends affecting the future of the industry.
CTM was founded over 25 years ago with the goal of providing thought leadership in the communications sector — an industry that was rocked by deregulation and the breakup of AT&T. Since then, CTM’s focus has evolved with the times: the rise of mobility, the emergence digital networks and devices, and the evolution of business models, partnerships, and the user experience. Today, CTM’s forums and educational programs provide critical insights for business leaders wrestling with the massive disruption caused by the convergence of communications, technology and media.

PCIA President & CEO Michael Fitch discusses the need for public-private partnerships at USC CTM’s LA Broadband Summit
CTM member organizations engage with the Institute via a number of activities and initiatives:

**Board Meetings & Strategy Sessions**: Each member company is represented on CTM’s board of directors, a consortium of senior executives and decision makers from corporations that are deeply invested in the growth of the digital communications sector and the industries related to it. Board meetings provide one of the most valuable opportunities for engagement, and include strategy sessions and other activities designed to both provide perspective on where the industry is headed and a powerful forum for driving change.

“The CTM board meeting [and Roundtable] is one of the only thing I’ll block two days of my time to attend...and it’s totally worth every minute.”

- CTM Board Member
**Research Programs:** Sponsored by a consortium of CTM’s member companies, CTM research programs cover mobile networks, applications and services, consumer behavior in digital environments, and the rapidly evolving entertainment sector. Sponsoring companies actively participate in survey design and in research workshops where they share their views on the results. For some studies, sponsoring companies are allowed to place proprietary questions in the survey questionnaire.

**Industry Forums:** CTM hosts a number of public and private forums in which participants explore the landscape of the emerging business ecosystem created by the convergence of new digital technologies, products, services and content enabled by increasingly powerful and complex broadband and wireless networks.

**Leadership Education:** Twice per year, CTM teaches a week-long course for high-potential rising leaders focused on the key technologies that are transforming the business landscape including mobile, cloud, and big data. Participants will also be introduced to techniques that drive innovation within their organizations, including executive storytelling.

“It’s not just the quality and relevance of the research. It’s the *process*. I get to interact with other researchers and contribute to the design of the surveys themselves.”

- Senior Director of Research, Technology Sector
Research

Sponsored by a consortium of CTM’s member companies, CTM research programs cover mobile networks, applications and services, consumer behavior in digital environments, and the rapidly evolving entertainment sector.

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The Digital Home Research Program is a year-long research study drawn from a sample of more than 4,000 respondents in the US and 1,500 in Canada. Currently in its 6th year, it provides insights into the connected, multi-screen digital home, relying on multi-years of collected data that track shifting consumer behaviors in digital environments and identify drivers and barriers of adoption of connected lifestyles.

Annual deliverables include a comprehensive report of yearly survey findings on such topics as device penetration and use, modes of media consumption, cord cutting, etc.; sponsor access to survey data online and two additional thematic reports per program year.

“Digital Home delivers survey findings on such topics as device penetration and use, modes of media consumption, cord cutting, etc..”
Tablets and smartphones are increasingly the devices of choice for video streaming and downloading:

<table>
<thead>
<tr>
<th>2013-2014</th>
<th>Stream and watch on TV</th>
<th>Download to a device and watch on TV</th>
<th>Stream and watch on Device</th>
<th>Download and watch on device</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laptop</td>
<td>-1%</td>
<td>-1%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Desktop</td>
<td>-2%</td>
<td>-1%</td>
<td>-3%</td>
<td>-1%</td>
</tr>
<tr>
<td>Tablet</td>
<td>10%</td>
<td>12%</td>
<td>7%</td>
<td>8%</td>
</tr>
<tr>
<td>Smartphone</td>
<td>9%</td>
<td>12%</td>
<td>6%</td>
<td>8%</td>
</tr>
<tr>
<td>Portable Media Device</td>
<td>1%</td>
<td>2%</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>Game Console</td>
<td>1%</td>
<td>7%</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>Blu-Ray</td>
<td>1%</td>
<td>2%</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>Smart TV</td>
<td>0%</td>
<td>0%</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>Streaming Device</td>
<td>2%</td>
<td>4%</td>
<td>2%</td>
<td>4%</td>
</tr>
</tbody>
</table>

Source: CTM Digital Home 6 Study (compiled from multiple survey questions)

Device Shift: Tablets and smartphones also have increased their share as second screen devices:

<table>
<thead>
<tr>
<th>Device</th>
<th>2013 Has All 8 2013</th>
<th>2014 Has All 8 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laptop</td>
<td>30% 36%</td>
<td>29% 16%</td>
</tr>
<tr>
<td>Smartphone</td>
<td>15% 25%</td>
<td>19% 31%</td>
</tr>
<tr>
<td>Tablet</td>
<td>9% 13%</td>
<td>14% 32%</td>
</tr>
<tr>
<td>Desktop</td>
<td>17% 15%</td>
<td>14% 11%</td>
</tr>
<tr>
<td>Game Console</td>
<td>1% 1%</td>
<td>1% 3%</td>
</tr>
<tr>
<td>E-Reader</td>
<td>1% 3%</td>
<td>1% 2%</td>
</tr>
<tr>
<td>Portable Media Player</td>
<td>1% 2%</td>
<td>1% 2%</td>
</tr>
<tr>
<td>Portable Gaming Device</td>
<td>1% 1%</td>
<td>1% 2%</td>
</tr>
</tbody>
</table>
The How Much Media Research Program studies how much media is concurrently accessed by consumers and analyses the level of attention that is paid to this media in a multi-screen, multi-device environment.

This year’s HMM Program focuses on analyzing the effectiveness of video advertising in digital media. The program will identify and evaluate the strategic growth drivers for digital advertising, including automation, the use of big data, open ecosystems and the increasing impact of mobile ads on traditional television advertising.

Deliverables will include: a deep background review of predictive advertising systems, models and methods; an analysis and modeling of selected use cases using current predictive advertising methods and an experimental pilot with student participants implementing and testing the findings of one of the selected use cases.
“By 2015, it is estimated that Americans will consume both traditional and digital media for over **1.7 trillion hours**, an average of approximately 15 and a half hours per person per day. The amount of media delivered will exceed...9 DVDs worth of data sent to the average consumer on an average day.”

Source: “How Much Media? 2013 - Report on American Consumers.” The study analyzed more than 30 different sources of media data, ranging from traditional media (TV, Radio, Voice telephony) to new digital sources (tablet computers, mobile gaming devices, smartphones, mobile video). (Media consumed while at work is not included.)
The Future of Media Research Program analyzes the evolving media consumption and the transformation of business models, as consumers view more video over alternative devices and subscribe to OTT video services. In so doing, it allows its sponsors to anticipate important industry changes and to develop actionable strategies to take advantage of these trends.

The first year included a Viewer Displacement Analysis based on a survey panel of 5,500 North-American consumers and extensive interviews of C-level executives from the media, telecom and technology sectors.

Deliverables for the current year (year 2) will include a thorough analysis of the unfolding of business scenarios for the future of media, such as Google expanding its fiber network and cable/satellite/MPVD operators unbundling their channel lineup. Economic analyses will be produced to evaluate the financial repercussions of these wild card events on the way filmed entertainment is financed and produced.
About Over-the-Top Users

The rise in over the top services like Netflix, Hulu, and Amazon Prime creates a wealth of opportunities for users to access content when and where they want it. Over-the-top (OTT) users get a number of advantages from these services, ranging from time-shifting and other conveniences to exclusive access to original content and more.

One phenomenon that is emblematic of the advantages of over the top services is binge viewing. Our study (below) observes that both OTT users and likely cancellers are interested in watching all of their content at once. This trend may suggest that marathons of popular shows on cable networks could prevent OTT users from cutting the cord.

Frequency of Binge Viewing

Source: CTM Digital Home Study. Q: Do you “binge” on TV shows? For example do you ever watch many episodes of a single show in a row, on DVD, Blu-ray, streamed, or on demand?

Interestingly, OTT users are expected to have the greatest displacement away from traditional television viewing, especially given the new viewing habits that are becoming prevalent among this group. However, at the moment, this doesn’t seem to be the reality — frequent OTT users are more likely than non-OTT users to watch a variety of pay TV channels. Frequent OTT users watch 10.8 channels on average at least once per week during prime time versus 9.0 channels for non-OTT users. This higher level of channel variety supports the view that frequent OTT users are especially interested in a wide variety of entertainment content.
A Word From the Top

Key Findings from CTM Future of Media Executive Interviews

1. The price of high-value television keeps rising at a time when the new digital media economics least support its cost.

2. **Content is viewed as unprofitable**: Cable and IPTV companies are resigned to retrenching to their broadband access business and charging more for it.

3. Established OTTs like Netflix replicate traditional media at a cost that the industry finds unsustainable over the long haul.

4. Other OTTs are prepared to sign carriage deals with cable and IPTV companies.

5. **Packaged media will be replaced by cloud-stored media** over a 10-year horizon.

“Cable and IPTV companies are resigned to retrenching to their broadband access business and charging more for it.”
The Global Mobile Research Program is an annual study of mobile phone users that has tracked usage behavior for the past 7 years. This global effort investigates how people value their mobile phones. It includes academic and government organizations from 14 markets in Asia, Europe, the Middle East and the US. Nationwide data is collected in several areas including: perceptions of value, motivations and interest, preferences for services and devices, frequency of use for an extensive variety of activities, detailed demographics and contextual factors.

**Mobile Usage by Activity: 2011 - 2012**

- **Communications**: 77%
- **Browsing/Search**: +10 68%
- **Info Services**: +12 65%
- **Entertainment**: +17 55%
- **M - Commerce**: +27 46%

Source: CTM 2013 Global Mobile Study
Mobile devices are on the rise and now include smartphones, tablets, and hybrid devices that possess much of the functionality typically provided by notebook PCs just a few years ago. Mobile devices (and wireless networks) play an enormous role in consumers’ lives, and consumer use of mobile features and services is evolving. In the mobile usage chart (below left), we see that, while communication (email, SMS, chat, MMS, IP telephony, etc.) is the most popular use for mobile devices, entertainment services (games, music, etc.) and m-commerce (buying or ordering goods, banking, etc.) are rapidly becoming more widespread.

Nevertheless, utility remains the driving attribute in mobile. As shown in Figure 2 below, 71% of mobile users said that they used wireless services because they are useful – an equal number cited time savings as a reason.

**Fig 2: Motivation for Using Wireless Services**

<table>
<thead>
<tr>
<th>Motivation</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can save money (e.g., find deals)</td>
<td>44%</td>
<td>59%</td>
</tr>
<tr>
<td>I can try out new things</td>
<td>49%</td>
<td>63%</td>
</tr>
<tr>
<td>They are useful</td>
<td>58%</td>
<td>71%</td>
</tr>
<tr>
<td>I can do some tasks more easily than my usual way</td>
<td>51%</td>
<td>63%</td>
</tr>
<tr>
<td>They give me freedom</td>
<td>49%</td>
<td>61%</td>
</tr>
<tr>
<td>I have privacy</td>
<td>54%</td>
<td>66%</td>
</tr>
<tr>
<td>I can save time</td>
<td>49%</td>
<td>60%</td>
</tr>
<tr>
<td>I can maintain my relationships</td>
<td>62%</td>
<td>71%</td>
</tr>
</tbody>
</table>

*Source: 2013 USC Global Mobile Study*
The ICT sector in rapid growth economies has developed significantly in terms of competitive environment and increases in mobile penetration rates. However, socio-economic variables like health and education have not shown the same change, nor has the GDP for the general population. In this study, CTM analyzes where ability to pay is most likely to be found and used to foster mobile growth, focusing on key markets such as Singapore, Indonesia, Thailand and the Philippines.

Deliverables include in-depth analyses where these markets are examined to define ability to pay for mobile services and determine where and how higher usage/payments can be generated.
Leadership Forums

CTM provides exceptional thought leadership and impactful networking opportunities for our sponsors and participants through a series of public and private events. These leadership forums play a critical role in CTM’s efforts to unite business leaders across industry sectors to embrace innovation and enhance the digital communications ecosystem.

Allison Cerra, head of Marketing for the Americas region at Alcatel-Lucent, shares insights from her book, Identity Shift.
Our premier event for networking is our Executive Round Table (ERT). Launched in 1985, ERT provides attendees an opportunity to discuss, candidly and off-the-record, the emerging opportunities to generate additional growth from the rapid proliferation of digital devices, services and content.

Presenters share their perspectives on what types of consumer experiences, partnering strategies, service platforms and value propositions will be necessary to attract customers in this new world. This event is invitation-only, with no press or bloggers allowed, and is regularly attended by CTM board members, research colleagues, industry partners and USC academics.

Fall 2014 Executive Roundtable: “Monetizing the Internet of Things” – Oct 2, Los Angeles

Digital Summit Series

CTM hosts additional, topic-specific forums throughout the year. These events are open to the public, and focus on emerging trends, technologies and business models. Recent Digital Summits include:

LEARNING TO WIN: Driving Innovation with Analytics (featuring Andrew Claster, head of analytics for the Obama re-election campaign)

BITCOIN: Unlocking the Potential of Digital Payment Systems (featuring Ken Feldman CEO of Blockstreet and Micah Winkelspecht, CEO of BitVault)

INTERNET OF THINGS LEARNING LOUNGE (featuring Doug Webster, Vice President of Global Marketing and Corporate Communications for Cisco Systems)
By the Numbers:

1,000: Over the past two years, the event has been attended by nearly 1,000 business professionals, entrepreneurs, investors, public officials and USC students and faculty.

150: Over 150 teams applied to compete in the two annual venture competitions.
Advanced Management Program

DISRUPTION. INNOVATION. CONVERGENCE.

Technology is evolving at an unprecedented rate, transforming the communications, technology, entertainment, and service sectors. Prospering in this environment requires thinking, leading, and managing in ways dictated by an informed vision of the future and a clear understanding of the technologies and media involved.

The Advanced Management Program (AMP) provides high-potential business leaders with the tools and perspective needed to manage and lead in an environment transformed by the convergence of the communications, technology, and media sectors. Participants will discover powerful management frameworks, explore emerging technologies, and complete a case study incorporating all aspects of the AMP program curriculum.

COURSE TOPICS [5-DAY SESSION]

• The connected, digital consumer and the emerging competitive landscape
• Business strategy in the age of mobile, digital, social, big data, and The Cloud
• Driving and managing innovation within organizations
• Generational impacts on the nature of customers & employees
• Driving positive change through executive storytelling
• A case study incorporating all aspects of the AMP program curriculum

“This course and these sessions reflect the complexity, challenges, and opportunities facing industry today. It is not theory. It is the rugged and rewarding reality that we’re learning about.”

AMP Participant
Interested?

To learn more about CTM activities, please feel free to explore our website at http://www.marshall.usc.edu/faculty/centers/ctm/. You may also contact us directly by email at: ctm@marshall.usc.edu or by phone at 213-740-0980.

Thought leadership at the intersection of technology and content. Join us!