CEDIA ESC of 2016 – Executive Summary

Purpose: The purpose of this document, developed by the CEDIA Technology Advisory Group, is to create a clearer image of technological and market conditions that will drive CEDIA dealers in 2016.

Background: The custom installation industry is in the midst of dramatic changes, driven by forces well beyond our control. These changes, both technological and market-based, are accelerating rapidly and are negatively impacting many CEDIA members' business models. In an age where profit margins are being aggressively reduced and service costs are skyrocketing, the CEDIA member of 2016 must be an Internet Protocol (IP) focused business that is agile enough to quickly adjust its business model to adapt to the ever-changing CEDIA landscape.

It is important to note that the projections made in this document are based on the assumption of a stable global environment, which is currently not the case. Thus, the potential for black swans (unknown unknowns) is high and could significantly affect the accuracy of these projections.[i]

Findings/Analyses:

1. The truly "connected home" will have arrived in 2016, allowing for homes to be more interactive and intelligent. These homes will utilize wireless devices which send bi-directional (peer-to-peer) data and commands. Many current Electronic Systems Contractors (ESC) do not have the in-depth knowledge of IP required to design the connected home and thus are not ready for their clients' needs in 5 years.
2. Networking and IP will be pervasive in most products; mobile devices will be the primary interface for electronics installed in a client's home. Many manufacturers seem uncertain of IP's role in their future products. However, a recent CEDIA survey showed that 32% of manufacturers felt that over half their products would be network capable in 2016.[ii]
3. The internet of things (IoT) and IPV6 will be in its infancy within the home, but will not take long to permeate the market beyond 2016. Wireless technologies such as 4G LTE and mobile WiMAX will ultimately obviate the need for local area networks as traditional modems, routers and switches are bypassed altogether (well beyond 2016).
4. Retrofit and remodel work will continue to be a mainstay of the CEDIA ESC as new housing construction will not have returned to the peak production levels seen in 2007[iii]. The demographics of the ESC's clients will continue to change as the number of older Americans rapidly grows, while the younger generation becomes more ethnically diverse in every major US city.[iv]
5. Higher-margin products will continue to become commoditized. This is possible because of Moore's law and lower energy consumption for processing power as seen in a recent Stanford study.[v] Nevertheless, Moore's law is approaching the limit of fundamental physics and chip vendors are hard at work designing novel solutions such as graphene transistors so the computing revolution will continue.
6. The digital home health and wellness industry will be exponentially larger as revenue is expected to exceed $5.7 billion by 2015[vi]. According to US Census Bureau data, the "older

population has grown more than 18 times as fast as the younger population."[vii] New and better types of sensors will facilitate the sales of digital health technology solutions and services.

7. In 2016, system integration will support new modes of interaction with home electronics such as gesture recognition, voice control and sensing human heat signatures. Custom control systems programming will likely be replaced by user-customizable apps running on common mobile devices with powerful back-end computing.
8. Cloud-based media services will be a dominant form of monetized content distribution in 2016. Bandwidth speeds are anticipated to increase twenty-folds by 2019[viii] which will easily deliver high-quality audio and video. A relevant example today is Google's experimentation in Kansas City with deploying fiber optic with speeds of up to 1 Gbps.
9. An area where the CEDIA member of 2016 has a chance to gain foothold is in home telepresence, including design of lighting and room acoustics. Telepresence may also be a complement to digital home health offerings. According to Dave Evans, Chief Futurist at Cisco, "By 2015, video calling will be pervasive, generating 400 exabytes of data—the equivalent of 20 million Libraries of Congress."[viii]
10. Many CEDIA businesses will evolve to a more mid-market model. Due to an increase in consumer awareness, demand will naturally rise. However, the increase in demand will most likely not increase margins (and will likely decrease costs) due to increased supply. Through new competition, improved supply chains, and manufacturing efficiencies, there will be a shift in the supply curve pushing prices downward. However, it is critical to remember that **high-end clients will always exist, as will the challenge of designing and building the "very best" for the affluent luxury market.**

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[i] Examples of black swans are national and international events which affect market conditions such as a debt crisis, natural disasters and international war. Unforeseen technological breakthroughs may also play a significant role in this document's accuracy.

[ii] 2011 CEDIA Post-EXPO Exhibitor Survey

[iii] Harvard Joint Center for Housing; November 1st, 2011

[iv] George S. Masnic "Changing Population and Changing Metropolitan Characteristics: Early Results from the 2010 Census" Joint Center for Housing Studies Harvard University

[v] "A Deeper Law than Moore's?" http://www.economist.com/node/21531350 The Economist, October 11, 2011

[vi] "Delivering Quality Care to the Digital Home:2010 Update" Parks & Associates h/t http://www.medhealthworld.com/?p=21

[vii] William Frye, "The Uneven Aging and 'Younging' of America: Trends in the 2010 Census," Brookings Institution, June 2011 and Harvard Joint Center for Housing, November 2011.

[viii] Dave Evans, "Top 25 Technology Predictions" Cisco IBSG Innovations Practice