

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Comment Sought on Broadband Adoption	)	GN Docket Nos. 09-47, 09-51, 09-137
	)	
NPB Public Notice #16	)	
	)	

**COMMENTS OF  
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And  
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Dated: December 2, 2009

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A-Vu Media Corporation and HBC hereby submit these comments in the above-captioned proceeding. In the *Notice*, the Federal Communications Commission (“Commission” or “FCC”) seeks comment on broadband adoption and usage, by which consumers can be empowered to utilize broadband connections for job creation, economic development, healthcare, education, civic engagement, and other purposes beneficial to the nation and society. In this Public Notice the FCC seeks comment on measuring broadband adoption, measuring the cost to society of having a large group of non-adopters, and identifying and remedying barriers to adoption. The Commission and the Broadband Technologies Opportunities Program (BTOP) have also identified older adults and the disabled as significant populations that have below average broadband adoption rates. Older adults and persons with disabilities will be the focus of these comments. It should be noted that A-Vu Media and Hiawatha Broadband Corporation have partnered with Winona Health, and Home and Community Options as a public/private partnership to implement a demonstration of the adoption strategies that will be discussed in these comments that would be funded by a BTOP Grant. Whether this specific proposal moves forward or not there are many related policy issues that the FCC should consider as part of its

Broadband Plan. The adoption strategies that will be discussed should be considered as a potential direction for Broadband Adoption throughout the country as they have the potential to impact independent living, health care cost and quality, and quality of life for these target populations. These proposed adoption strategies represent a significant new use of existing technologies that will impact national policy issues.

### **INTRODUCTION AND SUMMARY**

The 2009 Pew Internet and American Life Project identified four primary factors that impair broadband adoption: lack of availability, not perceived as affordable, not perceived as usable, and not perceived as relevant. Older adults and the disabled populations often face more than one of these barriers. Their historical low broadband adoption rate creates less interest to build connections, appliances, and services that meet their unique needs which, in turn, reinforces their perception of low value. This set of circumstances must be addressed if we are to deliver new strategies that will significantly utilize broadband as the high value resource that it can and should be for older adults and the disabled. The lack of effective broadband connections to these populations is also a significant barrier to the development and implementation of broadband based health care delivery options that can both lower the cost of care and improve health status. Since these populations represent several of the highest cost segments for health care we must include them in all next generation health care strategies to achieve meaningful, demonstrated health status improvement. We believe that broadband can and should be a significant resource to reduce isolation, improve quality of life, extend independent living, and improve health status while reducing cost. The proposed A-Vu Media broadband structure will produce significant benefits as a new broadband strategy that can be a model for self funding commercial implementation throughout the United States. We believe that the A-Vu broadband

strategy can create a 70 percent or greater broadband adoption rate for older adults and the disabled – populations we must address to the benefit of the country.

A-Vu Media and HBC are part of a public/private partnership based in Winona, Minnesota, and created by Hiawatha Broadband Communications, Winona Health (a non-profit health care system), Home and Community Options (a non-profit provider of housing and other services to the disabled), and A-Vu Media. This partnership is proposing new broadband adoption solutions for older adults and the disabled. A highly simplified user interface will provide access to broadband services with an integrated platform providing video, internet and phone services to a unified TV/Monitor and phone handset. The core system will not require personal computer (P.C.) capability or any self provisioning. Automated connections will be provisioned for the primary user and approved family, friends, and caregivers. Both the primary user and that user's personal network will realize significant value from the system by addressing issues of availability, affordability, usability, and relevancy of needed services. The user's personal network contacts are expected to be a major influence in the decision to pay for A-Vu services as a future commercial purchase. Use of the A-Vu broadband system will be managed by a U.S. based 24/7 customer service unit that has full remote control of all user features. This managed network creates immediate opportunities for health care and community organizations to reach these populations with new and compelling services that have been constrained by a lack of broadband connections or user capability. Health Care Networks, Disabled Service Operators, and Senior Housing Facilities of all care levels have also identified significant expected value from implementing the A-Vu-managed broadband system within their respective operations. One key factor to fully realize the value of the proposed new structure will be changes in the operations of service providers so that they can deliver their services through the

A-Vu structure that is available to them at the user location. Systems that have an absolute reliance on a keyboard or mouse for user inputs will not be able to take advantage of the new A-Vu-hosted broadband connections.

Most proposed solutions to the broadband needs of older adults, the disabled and health care focus on cost reduction or simplification but still require a user to self provision a P.C. on an open access network – a key barrier. A-Vu is a differentiating concept that creates value from user simplified access to a level of integrated services that have never been offered in a similar way on a secure fully managed broadband network. Today’s digital technology can be repackaged to deliver this concept. A-Vu will be an application package that can work on any existing high capacity broadband network. The transition to digital TV has created the technical foundation to implement this strategy and is significantly driving down the cost to implement

The A-Vu Media implementation partners (Winona Health, Home and Community Options, and Hiawatha Broadband Corporation) are organizations that are already technology leaders in their respective industries with demonstrated results. They all have a history of successful innovation with new technology development, design, and implementation. These organizations all endorse the A-Vu concept as the next generation solution to enhance and increase services, lower cost, improve quality of life, and extend independent living for the target populations. Other community, county, and Minnesota state organizations have also made commitments to participate in the development and implementation of this new system. Each has identified value added applications they can realize through the structure and capabilities of this new managed network. The greater community of Winona, MN, has also reviewed and endorsed this new structure with each community organization identifying new services and applications that they can implement on a fully managed secure broadband platform serving

these target populations. Since this is a new broadband service concept it will also be important to develop a complete profile of broadband use and related housing and healthcare costs before and after implementation of the proposed A-Vu system.

## **DISCUSSION**

### **I. THE UNIQUE NEEDS OF OLDER ADULTS AND THE DISABLED.**

Older adults and the disabled represent very large but significantly underserved markets for today's broadband based connections and services. Next-generation networks are emerging with significant focus on delivering bundles of voice, video and data (Internet) services, but these new bundles of services have not been developed for these populations and their unique needs or capabilities. Historical offerings that required adaptation to new technology or self-provisioning have failed economically. Broadband network operators frequently view these segments as low-dollar and high maintenance. The lack of connection and/or access to advanced services creates limits and personal isolation when these technologies could be significant assets to meet their unique needs.

The health care industry also has a significant need to innovate with expanded use of broadband-based services. Access to health care and its related costs are personal and national issues that will reach a crisis stage without major changes. Health care is facing a perfect storm of aging demographics, expanding medical technology, demands for expanded coverage, and slow growth in traditional resources. Part of the solution will be new delivery models that move into home-delivered health care that extend independent living, improve health and disease management, reduce inpatient days of care, and reduce the demands on traditional medical

resources. Older adults and the disabled represent very high-cost segments in the medical system and therefore must be part of the solution. However, their current lack of broadband connections creates barriers to implementing new health care options for their benefit.

The solution is to create a bundle of core non-medical services that will meet the communication, connection, and information needs of older adults, the disabled, their families, and their caregivers. The value of these basic services needs to be sufficient to support the installation and ongoing use of the core broadband system. These established and fully supported broadband connections then enable the delivery of emerging healthcare and other services. The primary motivators for older adults and the disabled along with their extended family and caregivers include: maintaining independence, staying connected, health care issues, migrating toward the familiar, security/safety, and predictable cost-of-living. We believe the proposed A-Vu integrated service structure can create broadband adoption rate in excess of 70 percent for these target markets.

## **II. INTEGRATED SERVICES AND A NEW USER INTERFACE.**

The A-Vu concept will deliver a highly simplified and automated user interface supported by a dedicated customer service center providing TV, Broadband Internet, and Phone Services. Basic services will be pre-packaged and offered to single-family and multi-unit residential facilities. The established broadband connection becomes the platform for expanding A-Vu-supported services into telemedicine and other value-added community or commercial offerings that are developed by other parties. The proposed A-Vu structure will not create medical services but enable their cost-effective delivery.

The Proposed New Integrated Screen and Simplified Remote.



This user interface provides direct access to television channels, music channels, personal stored music (“iPod” format), electronic photo albums, messages (voice, text or e-mail), pre-provisioned internet sites, and voice or broadband based video phone connections. A multimedia disk player is integrated into the system that is automatically accessed to play DVDs, CDs, or to load new content to the system. The proposed system operates on a new Digital “TV” and is supported by a “black Box” that is a hybrid of a Multimedia PC and a Digital Cable Box/DVR. The user has full control and access using a Wi-Fi based, highly simplified 12-button remote. Design of this system is a tradeoff between the benefits of automated access and user control or flexibility.

The phone will also be a highly simplified handset. It is proposed to be based on the latest hybrid phones that combine a Voice-Over-the-Internet-Protocol (VOIP) structure in the residence with a cell phone connection whenever the phone is out-of-range of the VOIP

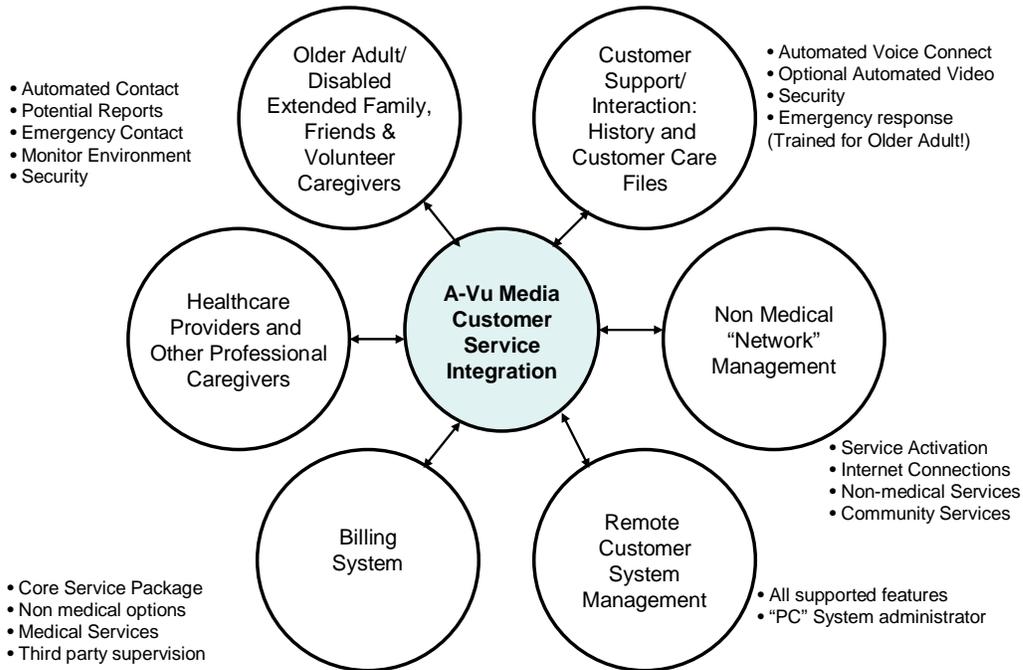
connection. This phone is expected to provide the highest level of connection and security possible for these users. If the VOIP connection in the residence fails for any reason, the phone will automatically seek a cell phone connection as a back up. GPS plus cell system location technology will provide the highest level of location information. Emergency calls can include the A-Vu customer service operator who has access to personal A-Vu customer medical and other information to assist any response team.

This proposed new structure primarily relies on the re-provisioning of existing technology rather than the creation of wholly new technology. The projected costs of A-Vu integrated technology will be significantly lower than similar services from legacy technology. Equivalent legacy systems to duplicate the services provided by an integrated A-Vu System include: a digital TV Screen, a DVD player, a DVR or DVR/Cable box, a PC, a separate PC Screen, a wired telephone and a wireless phone. Depending on the quality and features, these components would cost upwards of \$3,000. The projected hardware/software cost to provide the A-Vu system after full integration and at commercial volume is under \$1,000 including the cost of the “TV”.

### **III. A NEW CONCEPT OF BROADBAND CUSTOMER SERVICE**

The latest versions of personal multi-media systems have made provisions for remote control of home systems through broadband connections by the more sophisticated users. The A-Vu concept proposes that we use this remote control capability and PC administration functions to facilitate a new generation of customer service. The concept for the simplified user interface cannot work without the ability of a 24/7 customer service agent to remotely control and provision the user’s system. Simplicity for the user is mirrored by increased complexity at

the customer service operations. The profile of the connections and capabilities incorporated into the proposed A-Vu Customer Service model is illustrated as follows.



It is useful to think about the proposed A-Vu customer service operator as the “Ma Bell” operator of the 21<sup>st</sup> Century. When basic telephones were first introduced, a user called an operator to facilitate a long distance call. The user did not have to know how the system worked, just how to call the operator. With today’s broadband networks and existing remote control software, we can create an operator that can remotely control all of the proposed A-Vu services. This operator will, however, need to be very different from the typical customer service operator on today’s broadband networks. A-Vu will hire a US based operator for their social not technology skills. We will hire operators that have a demonstrated ability to work with these proposed users and then train them in the technology they need to manage. This primary

operator will be backed up by an advanced technical support group as needed. The A-Vu operator will also act as a concierge with the ability to direct a user to different broadband sourced information or services that are desired by the user or the user's network. Many older adults, the disabled, or their caregivers do not know what resources are already available. Persons with disabilities have unique needs. One part of this proposed broadband solution is to use persons with disabilities as customer service operators that can work from their homes and serve the disabled.

**IV. NEW OPPORTUNITIES FOR THE INTERNAL OPERATIONS OF HEALTH CARE NETWORKS AND OTHER SERVICE PROVIDERS**

The A-Vu managed network will provide additional operating benefits to hospitals and housing management organizations. Hospitals can replace their TV networks with broadband video networks that are capable of delivering traditional TV but also support live video connections from any point on the network to any other point. When a patient is admitted to the hospital or other care facility the A-Vu unit in their room can be provisioned to support all the personal network connections and access to entertainment that they desire. Nurses, doctors and other hospital staff will also have video, speaker phone, or text access to each patient. Since the connections are pre-programmed, hospital staff can also have automated access to family or external caregivers as may be needed for consultation or the ability to provide care updates. Education and training will also be enhanced by providing patient access to a Web-based library of accessible video material that can be ordered for the patient to use in the hospital or as follow up after discharge. Communications on the internal broadband network can also automatically update the Electronic Medical Record system and be recorded for billing or liability issues.

These parallel changes are needed in the health care structure to take full advantage of the new connections to older adults or the disabled. It is best if the health care structure has fully implemented EMR and PHR. This new integrated network will maximize their use of the system for external contact but also be a new platform to significantly change internal operations to maximize the value of broadband technology for all of its served population.

Organizations responsible for senior or disabled housing can have similar automated secure access to their managed residences in multi-dwelling units or to remote single housing locations. The secure broadband connections also provide opportunities for cost effective security and monitoring that can improve service and lower cost.

**V. THE COST BENEFIT OF THE PROPOSED NEW BROADBAND STRUCTURE**

The two largest benefits that could be lost if effective broadband strategies for older adults and the disabled are not developed are the costs related to the premature loss of independent living and avoidable costs for health care. The cost for an older adult or disabled person to move from independent living to each successive stage of supported living more than doubles at each stage. For most individuals they also tend to view the lifestyle and personal value of living at each stage as less desirable than the previous one. Therefore, the value of each year of sustained independent living represents thousands of dollars of cost savings per individual per year. As individuals use up their personal resources these added costs are often funded by state and federal programs.

The potential savings in health care dollars are much harder to estimate but they are expected to be the second greatest financial benefit from the new structure. Any projected cost impact from the implementation of home healthcare or other forms of tele-medicine from the use of broadband will be greatest from the application of those strategies for older adults and the

disabled. The current focus tends to be on the use of these medical broadband strategies for the boomer generation as it ages in the next 10-15 years assuming that they will bring their ability to use more traditional broadband connections into their retirement years. This assumption has significant implications but it underestimates the value of providing new independent living and healthcare options to the current generation of older adults and it does not cover the diminished capacity or interest of many older adults to learn or sustain new technology as they age and it continues to evolve.

**VI. POLICY IMPLICATIONS OF THE PROPOSED NEW A-VU BROADBAND STRUCTURE.**

The new concepts of this structure have several important policy implications for the FCC to consider in its development of the National Broadband Plan.

1. The definition and measurement of broadband connections.

The definition of a broadband connection should not be limited in any way to a requirement that the connection be to a traditional PC. This proposed new structure will provide a very robust connection to interactive broadband services and use of this new integrated structure should be included in Broadband Adoption Statistics. Users may see this new service as enhanced TV but one of the underlying structures is a broadband connection.

2. The potential application of the prohibition on MDU exclusives.

In order to take full advantage of the proposed systems capability, MDU operators will need the ability to implement the A-Vu integrated system throughout their managed operations with the use of a single broadband network operator.

3. The ultimate national goals for broadband network capacity.

The proposed A-Vu structure will add significant value through live broadband based video conference calls. The quality of these connections will be determined by the available

bandwidth on the host network. It is also significant that this demand will be primarily symmetrical with equal demands on the upload and download connection capacity. The quality of the video connection has significant impact on the potential utility for the healthcare community. One underlying goal of this structure is to be able to use broadband connections as lower cost options than traditional hospital or clinic visits. The quality of the live video connection will determine how extensive and effective the alternative broadband connection may be.

4. Health care and other reimbursement models.

The health care adoption of these new broadband capabilities for older adults and the disabled will be directly related to whether these new methods for treatment become reimbursable from private or government programs. Early implementation of these new strategies will need to fully document the cost and medical service impact. There will also need to be significant efforts to construct a system that will be a barrier to fraud and unapproved billing. While the FCC has no direct responsibility for these policy areas, it will be important that the FCC set the stage for other organizations that have this responsibility to understand that their decisions in these reimbursement areas will have significant impact on broadband adoption and value creation.

5. Proprietary versus open-access technology.

It is very possible to deliver the A-Vu concept with today's technology and limited cooperation from network operators. However, the competitive market for this type of integrated product and related service would be best served if parties can develop fully functioning systems that do not rely on the proprietary hardware or software of any single network operator. Network services and broadband connections will still be purchased from

a network operator but it would be best if third party developers could create fully integrated services with their own hardware/software packages without duplicating or relying on proprietary software controlled by the network operator. These technology packages could then be sold at retail or by a service provider.

6. Reconciliation of overlapping or conflicting policy issues.

Is the proposed A-Vu Media integrated system a TV/Video Service, is it a wired phone service, is it a broadband service, or is it a wireless phone service? The simple but potentially confusing answer is all of the above. This is due to the integration of digital technologies. Our legacy world of separate technologies has treated each of these services with separate rules and regulations. The value and usefulness of this historical approach will be challenged by this proposed new structure. Fees, taxes, and regulatory reporting under the current structures will likely become more challenging and potentially confusing over time.

7. Privacy and open-Internet-access issues.

One of the concerns expressed by potential users of the proposed A-Vu structure is privacy. The fully provisioned ability for live video connections has the expected benefit of enhanced communication to reduce isolation or provide new services but it also provides a secondary use as a security system. As a security system it needs to be provisioned for remote control and activation. This creates a general concern about “big brother” issues and whether the structure of the system could be abused and become an invasion of privacy rather than a new capability that has appropriate user control. In the near term A-Vu and its partners will handle these issues by contract with its users where those contracts specify all

of the authorities to activate the live video systems. This entire area could, however, benefit from creation of national standards with which all providers would comply.

The other issue is open access to the Internet. A-Vu will become the sole provider of access to the Internet for many of its customers. We again plan to create contracts that fully define what Internet content we will support them having access to and not. In the case of many older adults and some disabled users the family network, primary care providers, or persons with legal responsibility for these individuals do not want them to have open access to all content available on the Internet. One of the inherent benefits of the secure A-Vu structure is that it can block any unwanted content from reaching an A-Vu customer. It is currently assumed that Broadband Service Contracts that include these restrictions are both appropriate and can be legally implemented in spite of the general rules about any network operator constraining a user's access to the Internet.

### **CONCLUSION**

The alternative use of existing technology and the full integration of broadband with other high value services creates a new model to deliver high value broadband services to older adults and the disabled. Health care, housing and other community service providers need to be fully connected to the proposed new broadband structure if it is to realize its full value potential. A-Vu is a unique broadband model because of its level of integration on a single screen, its highly simplified user interface with automated access to pre-provisioned connections and related services, and its use of customer service with full remote control. Implementation of this new structure will have broadband policy implications that the FCC should consider as part of its National Broadband Plan.

It is difficult to fully understand this proposed new structure in a written description. Recognizing this, the partners in the proposed A-Vu structure are available for a demonstration and further discussion of the proposed concept in Washington, DC or in Winona, Minnesota if desired.

Respectfully submitted for:

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