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Requested date:	03-January-2011
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Office of the General Counsel
Freedom of Information and Privacy Act

May 26, 2011

RE: **Request Pursuant to the Freedom of Information Act – FOIA #11-029**

This letter is in response to your Freedom of Information Act (FOIA) request to the Broadcasting Board of Governors (BBG), dated January 3, 2011, which the Agency received on January 11, 2011. In your request, you ask for a copy of the 2011-2012 BBG Technology Strategic Plan and a copy of the BBG Technology Update. Thank you for your patience while the Agency processed your request.

Enclosed is a compact disk containing copies of the documents you requested. Certain information in the BBG Technology Strategic Plan was determined to be privileged advice that could result in harm to the Agency if released to the public and was withheld pursuant to FOIA Exemption 5. No information was redacted or withheld from the Technology Update.

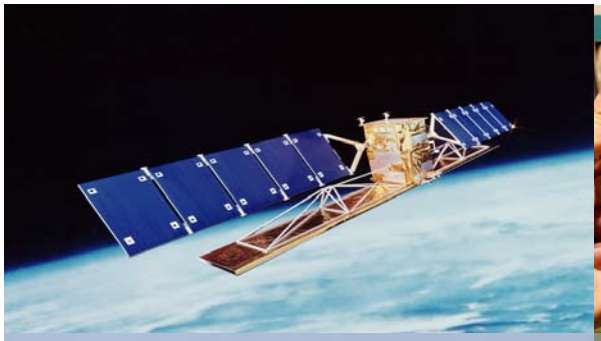
This completes the Agency's response to this FOIA request and it is now closed. Because certain information was redacted from one of the released documents, under the FOIA you have the right to appeal that decision. If you wish to do so, send your appeal within thirty (30) calendar days from the date of this letter to the Chairperson, Access Appeal Committee, BBG, Suite 3349, 330 Independence Avenue, SW, Washington, DC 20237. Currently, no inquiries or appeals are accepted via E-mail.

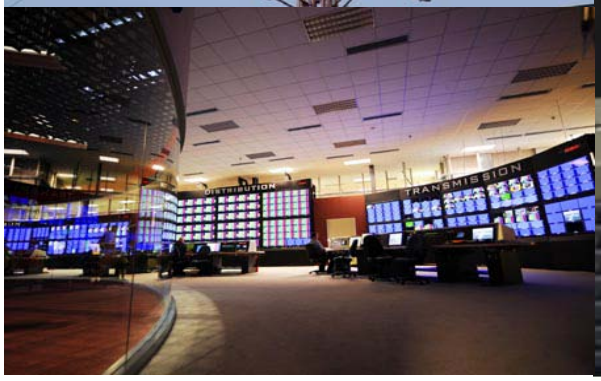
Sincerely,

Andrew T. Krog
FOIA and Privacy Act Officer

2010-2012

Technology Strategic Plan





André V. Mendes

Broadcasting Board of Governors

2010-2012

Table of Contents

I – Introduction

The Broadcasting Board of Governors (BBG), an independent Federal agency, of the United States Government, is the responsible body for all civilian U. S. international broadcasting.

This document, the "*2010-2012 BBG Technology Strategic Plan*" henceforth referred to as "*The Plan*", is designed to provide strategic technological guidance for the Agency during the two year period starting in June 2010. It provides guidance and an overarching technical framework that enables the Agency's seamless evolution and growth within an ever-accelerating global media landscape.

The information and recommendations contained herein culminate an approximately four month data collection process and concomitant analysis of hundreds of data points, included but not limited, to:

- Extensive interviews with Engineering office personnel
- Numerous interviews with other Agency personnel
- Dozens of visits to main and ancillary technical facilities within the Cohen and Switzer building
- Review of the current application portfolio administered by the organization
- Analysis of the current technical platforms
- Evaluation of the level of technical maturity in the current environment
- Visits to transmitting stations in Greenville, N.C. and Lampertheim/Biblis in Germany
- Visit to the RFA offices in Washington, D.C.
- Visit to the RFE/RL offices in Prague, Czech Republic

Obviously, the amount of organizational knowledge that can be tapped and acquired in such a relatively short period of time precludes this or any set of recommendations from being exhaustive, encompassing all operational and logistical nuances, and generally addressing all real and perceived shortcomings of the current organization.

The current Office of Engineering and Technical Services has historically provided the agency with the technological wherewithal necessary to conduct its daily business, accomplish its mission, and deliver its precious content to oppressed populations throughout the globe.

The dedication of Engineering's personnel and their willingness to go the extra mile on behalf of the agency is commendable. Throughout the organization, myriad

examples of technical excellence, outstanding innovation, and a deep level of commitment that is absolutely beyond reproach abound.

The complexities surrounding the rapidly evolving broadcast media landscape, the never-ending change intrinsically associated with the Agency's mission, and the additional variables associated with policy and political realities have, however, contributed to create a fast-moving environment where quick reaction is at a premium and often trumps the attention and allocation of resources dedicated to ensure long-term stability.

Hence, the current situation and the need for profound strategic change that places additional emphasis on long-term sustainability, resource optimization, and the leveraging of proven industry best practices to achieve an optimum balance between organization agility and operational robustness.

Invariably, this type of introspective analysis leads to painful realizations, awkward interactions, and even the staunch denial of existing problems. Problem amelioration and eventual resolution will require both short-term commitment and long-term resilience to effect transformation. Without a doubt, the road ahead will present substantial challenges and, at least initially, an increased operational risk as the "from the ground up" change process begins.

Nothing in *The Plan* should be considered accusatory or intending to imply negligence. The evolution of technical environments is always a complex byproduct of organizational circumstances, budgetary constraints, human and leadership resources, changing priorities and rapidly evolving industry landscapes.

Over time, these factors conspire to create an organizational insularity that, despite everybody's best efforts and intentions, requires a reset of expectations, priorities, and operational imperatives to rejuvenate itself, catch up with the industry at large, and return to a perception of excellence. That time has come.

I would like to express my deep appreciation for the cooperation and candor that permeated all of my data gathering activities to date. I trust that they presage a set of fruitful activities as we endeavor to:

- Preserve and nurture the many areas of excellence throughout the office
- Embark on remediation efforts to address the problem areas identified
- Systematically transform the organization into a proactive, agile, thoughtful and pragmatic organization with:
    - Intense and continuous focus on customer service and the fulfillment of the agency's mission.
    - Outstanding operational performance

- Embracing of industry and government best practices and innovation
- Outstanding stewardship of taxpayer's funds.

Subject to revisions twice a year, *The Plan* will be completely transparent and will serve as a living document that reflects the progress made along its implementation, changes in the global media landscape, and the adjustments necessary to properly operate in fluid national and global geo-political landscapes.

To avoid confusion, this document will refer to the overall Engineering organization as Technology, to technical disciplines (such as Radio & TV transmission, Satellite distribution, broadcast facility construction and operation and related management efforts) as Engineering, and to Information Technology areas as IT.

II – Current Situation in Technology

Within the Engineering office, the current approach to technology is clearly delineated along two major areas that, although intersecting along a myriad of touch points, have remained relatively isolated from each other:

The classical "Engineering" organization that focuses on activities such as:

- Distribution of content produced by VOA, RFA, RFE/RL, MBN, and OCB
- Management, operation and maintenance of transmission assets located in the U.S. and throughout the world
- Management of an extensive global network of leased satellite capacity
- Administration of transmission frequencies
- Management of lease contracts leveraging third party transmission facilities
- Management of business continuity/disaster recovery capabilities
- Many other program delivery-related activities

And a classical "Information Technology" that fulfills the typical responsibilities associated with the maintenance and development of the IT infrastructure including items such as:

- Networks (within building, across campus, connecting transmitting stations, etc.)
- Cabling assemblies (throughout the building)
- Infrastructure Servers (authentication, security, etc.)
- Application Servers (email, intranet, database, Digital Asset Management)
- Storage Devices (data, audio, video)
- Backup facilities (data, audio, video)
- Networked printing equipment (Including networked high speed copiers)
- End user equipment (desktop, laptops, images, printers, scanners, etc.)
- Development and maintenance of in-house applications (office & databases)
- Integration and maintenance of third party applications (Dalet, Diva, etc.)
- Many other IT-related activities

Although once the norm in broadcasting, today's effective separation and isolation between Engineering and IT constitutes a serious impediment to progress. This situation is further exacerbated by other segmentation of technology infrastructure and capability within the agency.

This situation will become more and more burdensome as broadcasting continues to increase its usage of IT based technologies, and the content production and delivery systems come to rely almost exclusively on standard IT platforms.

II – I – Current Situation in Engineering

At present, the engineering organization provides origination, handling, and distribution services in virtually every broadcasting technology ever used across the globe. From its mostly shortwave (SW) origins, the organization has grown to provide robust AM, FM, satellite radio, satellite TV, Internet, and telephone-based content distribution.

As each successive technology was deployed, and no corresponding technology was obsoleted, the organization has grown in operational complexity while simultaneously coping with fairly predictable cuts in overall budget.

Providing sustained excellence in service delivery, flexibility and customer service, Engineering is coping with many challenges as it confronts the ongoing onus of technology migrations and the silent but ever growing burden of a burgeoning distribution methodologies portfolio.

Its most serious challenges include:

1. Declining mission effectiveness of its shortwave transmitting station network.
2. Disconnect between station closings and increased shortwave use
3. Administrative complexity of its AM, FM, and satellite capacity (contracts & operations)
4. Decline in skills relevance for a sizable portion of its workforce
5. Low morale amongst engineering staff precipitated by station closings
6. Technical space issues as it coexists with other technical agency operations (NCC)
7. Absence of a governance structure that ensures proper project prioritization
8. Declining financial resources despite internal perception to the contrary
9. Lack of a solid Business Continuity/Disaster Recovery Plan

1 – Declining SW Mission Effectiveness

Despite substantial transmitting station closings and steady optimization of station operations, the intrinsic high cost of operating high powered shortwave stations is constantly being weighed against the rapidly diminishing effectiveness of shortwave within a growing number of countries.

As the population in most countries has continued to migrate its media consumption to other technologies (AM, FM, TV, satellite radio and TV, mobile phones, and the Internet), the cost effectiveness of shortwave transmissions

continues to wane and is expected to be circumscribed to a very small number of target countries in the relatively near future.

This particular challenge is being echoed by all major global international broadcasters. Despite likely political pressures to continue widespread use of shortwave, its thoughtful and targeted reduction presents the best potential for cost savings and substantial increases in price performance ratio for the entire agency.

2 – Disconnect between SW station closings and increase in SW usage

Despite several recent high profile station closings, the organization continues to employ shortwave as the most important transmission mechanism to many of the target areas around the globe. Often surge activities are enabled by additional shortwave transmissions that end up as an integral part of the ongoing schedule.

Effectively, this diminution of transmission resources accompanied by no reduction or even an increase of reliance on this transmission methodology creates overburdened schedules and often the deployment of less than optimal assets for transmission into target areas. This additional operational burden likely extends to other disciplines within the agency where programming staff must expend substantial additional effort to produce or adapt content for a multiplicity of transmission methods.

In essence, the decision process for station closing does not appear to follow an overt decision and stated plan to reduce shortwave usage.

3 – Increased administrative complexity

In contrast with its history of administering a network of Agency-owned transmitting stations with dedicated staffs and fairly prescribed operation methodologies, Engineering is now engaged in a far more complex administrative exercise that spans:

- A multitude of technologies
- Far more complex content distribution (multi-hop satellite paths)
- Large number of third party providers
- Much larger portfolio of contracts with increased granularity
- An increasingly complex set of coverage maps

- Limited in-country personnel
- In-country operational issues (war, terrorism, contractor reliability, parts availability, fluctuating currency exchange rates and power costs)
- Interfacing and liaison with the evolving USG engagement strategies

This increased complexity and skills diversity requirements have created a situation where multiple key-person dependencies have arisen with the concomitant increase in operational risk.

4 – Skills relevance decline

As the dependence on shortwave continues to wane and the distribution focus shifts to third party operations, satellite and other direct-to-consumer methodologies, the skill sets of some engineering personnel become less and less relevant to the agency.

This issue is further compounded by the relatively difficult transition from a traditional RF, antenna, transmitter design, and maintenance knowledge base to the technologies involved in digital satellite and IP-based networking systems.

Unfortunately, even project management skills tend to be radically different in a facilities construction/maintenance type of environment versus a typical IT systems development environment where the intrinsic knowledge of hardware, software, and network interactions are essential for project management effectiveness.

5 – Low morale associated with station closings

The issue of low morale is palpable and often present in conversations that address historical perspectives on a particular station closing, transfer of technologies around the network and any other such topics. Precipitated by the long periods of employment that are relatively standard in the Engineering area and perfectly understandable, this grieving process is a natural consequence of the pride involved in creating a state-of-the-art technical facility only to see it being dissected piece by piece as technology continues its relentless creative destruction.

The apparent disconnect highlighted in item #2 where there are no clear, BBG approved, plans for future direction also appears to contribute to a general feeling of disaffection.

6 – Shared facilities in the NCC

As time has passed and the number of different technologies and services has expanded, the Network Control Center (NCC) finds itself in an increasingly difficult and dangerous position regarding the maintenance and upgrading of its equipment.

Without space for consolidation and deployment of new systems, the situation continues to devolve into relative disorganization and lack of operational coherence as every nook and cranny of the space becomes replete with equipment. HVAC is distributed rather unevenly, and cable assemblies are chaotic and likely impossible to quickly troubleshoot should the need arise.

7 – Absence of an Engineering governance structure

Presently, Engineering has no formal structure for introducing, discussing, prioritizing, evaluating, or terminating projects in collaboration with and under direction of the Agency's senior managers. As a result, Engineering has no mechanism for establishing clear priorities, ensuring organizational buy-in, and effectively sharing the burden of change management with the organization. As a result, the Agency experiences higher costs, painful long-term integration and overall increased chances of failure.

8 – Declining financial resources

Despite a perception to the contrary on the part of its major users, Engineering, not unlike its counterparts in programming, is struggling with the additional financial burden associated with various operating factors, including:

- The burgeoning number of distribution technologies employed to address the changing media consumption habits in target countries
- The increase in number of frequency allocations as countermeasures to jamming efforts
- The growing number of outsourced transmission contracts

9 – Business Continuity/Disaster Recovery Plan

Despite substantial and conscientious effort, the current Business Continuity and Disaster Recovery plan for Engineering falls short of industry standards and best practices. Effectively, one could assume that, in the event of a crisis, a modicum of services would be re-established within a few hours, it is fair to say that such a process would be highly dependent on the presence of a few key individuals whose absence would severely hamper any such recovery efforts.

The almost complete absence of written plans with precise instructions, combined with the lack of defined processes for emergency communications or critical decision making, create a substantial operational exposure to the agency.

II – I Summary:

Engineering is by and large a well-functioning organization that, day in and day out, fulfills its charter with a mixture of accumulated expertise, profound staff dedication and occasional heroics needed to address the changing needs of the BBG entities. However, its organizational profile is highly reactive and reflects the agency at large.

While routinely addressing a rapidly-evolving set of requirements, the organization ends up ignoring, out of necessity, baseline operational discipline and risk mitigation processes especially in the area of business continuity and disaster recovery and therefore dramatically raises its risk profile.

As such, the organization presents a set of operational exposures that must be addressed in systematic fashion so as to maximize operational effectiveness, and seamlessly transition into new distribution methodologies while substantially reducing said risk profile.

As depicted below, the Capability Maturity Model Integration (CMMI) is a process improvement approach that helps organizations improve their performance. As defined in this model, it is probably fair to classify the Engineering area as operating somewhere in the lower ranges of Level 2.

Capability Maturity Model – Integrated

Level	Focus	Process Areas	Result
5 Optimizing	***Continuous process improvement***	Organizational Innovation & Deployment Causal Analysis and Resolution	**Productivity & Quality**
4 Quantitatively Managed	***Quantitative management***	Organizational Process Performance Quantitative Project Management	
3 Defined	***Process standardization***	Requirements Development Technical Solution Product Integration Verification Validation Organizational Process Focus Organizational Process Definition Organizational Training Integrated Project Management Risk Management Decision Analysis and Resolution	
2 Managed	***Basic project management***	Requirements Management Project Planning Project Monitoring & Control Supplier Agreement Management Measurement and Analysis Process & Product Quality Assurance Configuration Management	
1 Initial	***Competent people and heroics***		

II – II – The Current Situation in Information Technology (IT)

The BBG IT environment presents a mix of operational characteristics that, similar to its Engineering counterpart, reflects the ethos of the agency at large. Although some of its systems are quite sophisticated and perform admirably, they often do so as a by-product of employee dedication, substantial expense, and ultimately luck. Overall systems design and coherence between project deployments is sorely lacking and is reflected in a highly complex environment with poor overall integration.

In comparison with other broadcast media, and even taking into consideration the substantial burdens imposed by Federal operating requirements and regulations, the BBG IT Directorate falls well short in certain basic functionality offerings and presents a much higher risk profile than one should expect from a relatively well-funded environment.

The following areas represent the biggest challenges to the organization:

1. Multiple single points of failure in critical infrastructure
2. Poor infrastructure layout and maintenance
3. Non-existent business continuity and disaster recovery plans and procedures
4. Lack of an overall platform strategy that reflects de facto industry standards
5. Dogmatic application and platform choices
6. Insufficient scheduled maintenance intervals
7. Absence of a governance structure that ensures proper project prioritization
8. Absence of formal, reasonable departmental performance targets
9. Non-existent policies and procedures in crucial areas of the organization
10. Severe organizational mis-alignment, dysfunction, and in-fighting
11. Lack of formal project management training and discipline
12. Low level of trust from Agency's senior management

1 – Single points of failure in critical infrastructure

While single points of failure are present throughout the organization, the most serious situation presents itself at the heart of the BBG IT network. Currently, the network is dependent on a single enterprise-class Cisco core router whose failure would severely cripple the entire agency for an extended period of time. Although this type of equipment is historically very reliable, and contains a substantial amount of redundancy built into its chassis (multiple power supplies, multiple fans, and dual supervisory modules) this router is nevertheless a single point of failure.

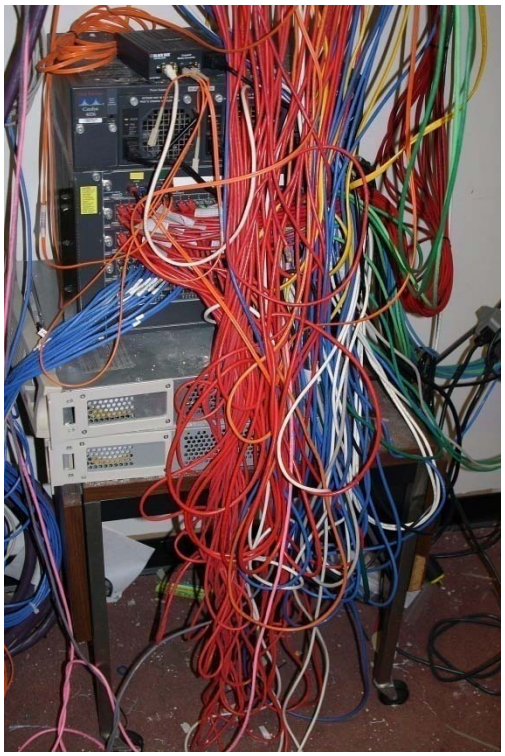
In most environments, a single router setup is an acceptable balance between risk and expense, but because the BBG incurred the added, and substantial, expense of purchasing a similar router for redundancy, this redundant router's non-deployment in a usable fashion is cause for substantial concern.

Many other such situations exist. For example, networking equipment with single power supplies and servers equipped with dual power supplies but with both power cords plugged into a single electrical circuit effectively negating the investment in power supply redundancy.

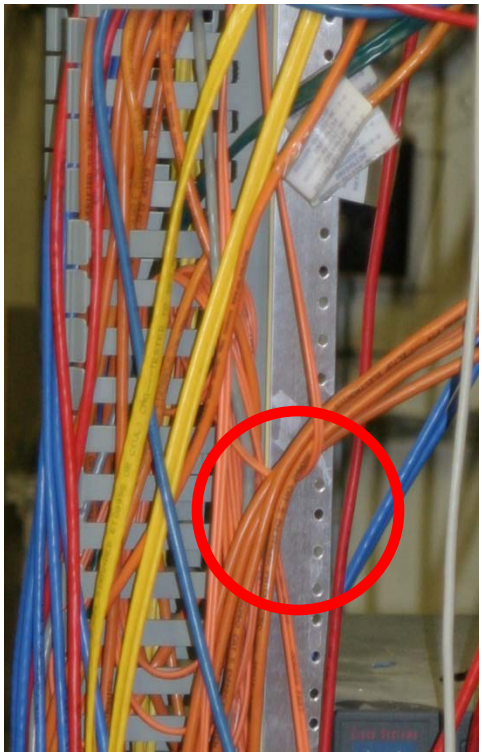
2 – Poor infrastructure layout and maintenance

The cabling infrastructure that supports the BBG network is in serious disarray. Below one can find examples of extremely poor cabling practices (picture 1), performance robbing lay-outs (picture 2), and outright waste of expensive cabling resources (picture 3).

Of particular concern is the cabling into the main core router (picture 4) as it exposes the organization to undue risk even in the event of a small failure. For comparison purposes, Picture 5 shows an existing cable assembly **in the building** that illustrates how cabling can and should be deployed.

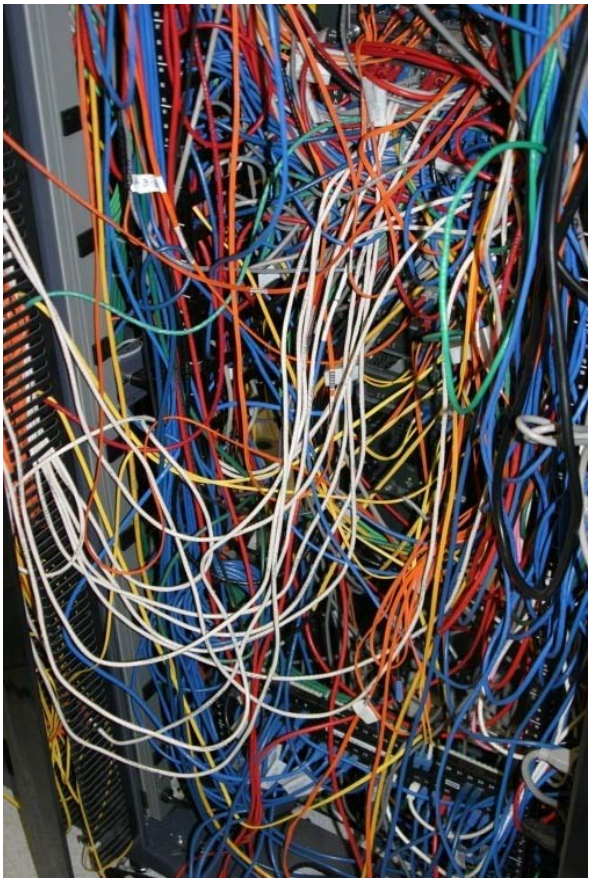


Picture 1



Picture 2

Picture 3



Picture 4

Picture 5

3 – Business Continuity/Disaster Recovery Plan

(b) (5) [redacted]

4 – No overall platform standards and strategy

Currently, the IT department's server and storage infrastructure is spread throughout the building in seven different datacenters. This arrangement increases the overall complexity of the environment, requires additional wiring, electrical, and HVAC expenditures, and precludes economies of scale.

To date, little or no attention has been paid to server consolidation efforts, and virtualization scenarios, while recently introduced, have not yet been leveraged to any significant degree. Indubitably, budgetary considerations have affected said deployment, but the substantial performance and cost effectiveness of this industry-wide operational imperative have not been properly "socialized" with and "sold" to the Agency's senior management.

In addition, the IT Directorate has to manage eight different storage environments, each originating from a different vendor. Effectively, the BBG IT environment is composed of a substantial number of point solutions designed to address new projects but deployed and managed outside of an overall strategic framework for platform deployment.

5 – Dogmatic platform and application choices

Historically, the BBG IT Directorate has made several platform choices and decisions based on the dogmatic beliefs of some of its more influential members without careful analysis of industry trends, benefits to the end-user in the form of additional functionality, potential decrease in environmental complexity, and cost effectiveness of alternate solutions.

The result is an overly complex environment that fails to provide many basic *de facto* functionality integration points that are standard in most other medium-sized IT deployments.

As an example, basic, inexpensive, and industry standard infrastructure tools such as *MRTG* and *What's Up Gold* have been ignored in favor of an expensive and overly complex "Cadillac" package called *Spectrum* that has proven extremely challenging to deploy and maintain. Over the past three months, several failures have gone undetected or unreported because of poor configuration and have resulted in extensive downtime or degraded performance for several platforms.

Of particular relevance was the decision to implement but poorly maintain and more recently upgrade an e-mail platform whose market share never reached the critical mass necessary to ensure widespread Independent Software Vendor (ISV) support. The ensuing result is an almost complete lack of integration with *de facto* standard mobile technology that has otherwise evolved to provide tremendous productivity gains to an increasingly more "remotely connected" workforce.

6 – Insufficient scheduled maintenance intervals

The current allocation of four hours once a month is insufficient for the proper maintenance to be performed on an infrastructure of this size and operational scope.

Proper senior staff education should enable a maintenance window commensurate with the environment's complexity that allows for proper execution of recommended maintenance procedures. Over time, this additional maintenance window will enable faster platform deployment and migrations and help create a more agile organization while preserving the system's availability necessary to carry out the agency's mission.

7 – Absence of an IT governance structure

Presently, IT has no formal structure for introducing, discussing, prioritizing, evaluating, or terminating projects in collaboration with and under direction of the Agency's senior managers. As a result, IT has no mechanism for establishing clear priorities, ensuring organizational buy-in, and effectively sharing the

burden of change management with the organization. Inexorably, this lack of a formal decision body outside of IT creates a situation where projects are more easily ignored, often under-resourced, and occasionally sabotaged. As a result, the Agency experiences higher costs, painful long-term integration and overall increased chances of failure.

8 – Absence of formal availability and performance targets

With the exception of a poorly defined and likely not achievable target of 99.999% availability for the network, there are no established and widely agreed upon standards for availability and/or performance targets for IT systems.

In the absence of those clearly stated performance expectations and without the proper education of senior management regarding the relative trade-offs of reliability and cost, IT often has to justify any and all downtime associated with the systems it provides.

Effectively, in the absence of any target, expected availability becomes 100%, a level of performance not achievable by design even in the most resource-rich environments.

9 – Organizational misalignment, dysfunction, and behavioral issues

Unfortunately, in its current form, the IT organization contains several historical and personality-related "accommodations" designed to isolate certain individuals and maintain legacy reporting relationships.

This set of circumstances has led to blurry lines of responsibility, finger pointing, morale issues, and lower overall performance. Occasionally, these issues have bled into the service area and translated into lowers service levels being experienced by non-IT staff members, leading to a general perception that portions of the IT organization are less than responsive and that the default answer to service inquiries is "No." Although largely false and based on anecdotal evidence, this perception is nevertheless relatively widespread.

10 – Lack of formal project management training and discipline

Despite some isolated efforts at the deployment of Project Management processes and discipline, a substantial amount of the work is accomplished in a relatively ad-hoc basis without documented and agreed upon requirements, meager, if any, associated documentation efforts, and general poor adherence to timely delivery on project milestones and deadlines.

11 – Low level of trust from the Agency's Senior Management

As a result of many of the operational characteristics highlighted above, there is a general sense of distrust of the IT Directorate's ability to deliver solid and consistent results to the organization. Often, other portions of the organization procure and deploy technology solutions outside of IT's sphere of influence because of this perception. Although some of the blame associated with that lack of an agency wide technology umbrella falls clearly outside of IT, the necessity for seeking other solutions is often affirmed by, and justified, by the IT organization's own behavior.

II – II – Summary:

Despite all of the problems highlighted above, **the IT Directorate manages to deliver a relatively high level of service to its stakeholders**. Unfortunately, a substantial portion of the value-added service that IT brings to the table is obscured and occasionally erased by some poor operational characteristics.

Improved decision making will allow the IT Directorate to simplify and re-engineer an unnecessarily complex environment into a more streamlined operation. In turn, this will equip IT to deal with an extremely fast moving broadcast media environment and an organization at large that exhibits its own performance issues associated with the lack of operational discipline often present in intensively reactive environments.

As defined in the Capability Maturity Model Integration (CMMI), it is probably fair to classify the IT Directorate as operating somewhere in between level 1 and Level 2.

Capability Maturity Model – Integrated

Level	Focus	Process Areas	Result
5 Optimizing	*Continuous process improvement*	Organizational Innovation & Deployment Causal Analysis and Resolution	Productivity & Quality
4 Quantitatively Managed	*Quantitative management*	Organizational Process Performance Quantitative Project Management	
3 Defined	*Process standardization*	Requirements Development Technical Solution Product Integration Verification Validation Organizational Process Focus Organizational Process Definition Organizational Training Integrated Project Management Risk Management Decision Analysis and Resolution	
2 Managed	*Basic project management*	Requirements Management Project Planning Project Monitoring & Control Supplier Agreement Management Measurement and Analysis Process & Product Quality Assurance Configuration Management	
1 Initial	*Competent people and heroics*		

III – Moving Forward – A Two-Year Strategy for Transformation

As the media landscape continues to evolve and the geo-political situation shows no evidence of stabilizing, BBG Technology must quickly address some of its operational issues and must catch up to the broadcast industry at large.

The current challenges for the two major Technology disciplines (Engineering and IT) might, on the surface, appear rather different. Obviously, they are at very different stages in their maturity level, and almost all of the Engineering transmission methodologies (SW, MW, FM, and TV) predate the entire IT industry. Nonetheless, they are both mission-critical technical environments that exhibit many of the same requirements for reliability, supply chain optimization, and the constant improvement of operating price performance ratios.

As the use of IT based technologies permeates the creation, editing, and distribution of media content, only in the final terrestrial distribution to the end users are standard analog radio frequencies (RF) used. As such, these two disciplines continue to grow ever closer and benefit from the same philosophies of technical management and operating paradigms. The expected systematic progress within the IT organization will be reflected in constant operational improvement within Engineering as well.

By supplementing the staff's substantial technical knowledge and accumulated corporate memory with sound operational discipline, an overarching platform strategy, and a transparent managerial philosophy, *The Plan* will create a standardized and more manageable technical infrastructure that will gradually accomplish four major objectives:

- Reducing organizational risk
- Increasing reliability of systems
- Increasing operational agility
- Lowering operating costs

Already started, this two-year process will implement four stages of evolution, each designed to further accomplish the stated objectives:

1. Platform **Consolidation**
2. Platform **Virtualization**
3. Systems **Co-location**
4. Computing in the **Cloud**

1 – Platform Consolidation

By selecting a set of platform standards for the entire organization and by systematically migrating systems and applications from other platforms into this standard environments, the organization can quickly consolidate its operating basis, simplify integration of systems, develop deeper technical knowledge amongst the staff, and leverage the economies of scale that come from not only its own consolidation but from those platforms that have or are becoming *de facto* industry standards.

In the Engineering arena, this approach will be mostly focused on the usage of shortwave and the pragmatic analysis of its expected lifespan and overall scope of global operations but also will include continued migration to MPEG4 compression technology and steady introduction of IP transmission protocols.

In the IT arena, this process will endeavor to quickly reduce the number of computing and storage platforms which will allow for much improved operational focus. Initially this process' influence will only be felt within IT, but quickly, as operational agility steadily increases, this standardization will enable faster deployments and easier migrations into more cost-effective business models throughout the Agency.

2 – Platform Virtualization

Leveraging server, storage, and networking virtualization, the BBG can substantially increase the performance of its capital investments. While describing the processes behind platform virtualization far exceed the scope of this document, the advantages of its superior price-performance ratios are well documented and can be gleaned in Appendix C. Fast becoming an industry standard, platform virtualization is generally recognized as one of the best tools available for computing environments that wish to increase operational agility, increase reliability, reduce risk, and lower operating costs. It has become a priority for implementation in the Federal space where a government wide consolidation and virtualization process is currently underway (See Appendix B.) Recently, the BBG's IT Directorate has begun to deploy and leverage virtual servers in its computing environment.

3 – Systems Co-location

Besides the inherent challenges associated with operating a complex computing environment, technical organizations also must deal with the baseline infrastructure necessary to sustain those operations. Issues such as reliable power and HVAC become extremely important because a failure in those systems quickly translates into unexpected downtime and lowered reliability.

By collocating systems in high availability data centers specifically designed with multiple redundancy layers, the BBG can effectively leverage much higher expected levels of infrastructure reliability than it is likely to achieve with its own dedicated investment. The BBG is already leveraging a co-location strategy with some of its primary applications, including its financial, payroll, and Human Resource systems (ie. Momentum, DFAS, and DCPDS)

4 – Cloud Computing

Taking the next step in de-leveraging its own capital investments, the BBG can eventually migrate a substantial portion of its application portfolio into a cloud computing scenario where effectively it rents a set of computing infrastructure and software components essential to its operation without having to continually invest in its maintenance, updates, upgrades, and replacements. In addition, by leveraging cloud computing, the BBG can better leverage its own staff with higher level tasks that are unique to the BBG and that pertain directly to the accomplishment of its primary mission.

The BBG already leverages cloud computing and storage for its web sites with ClickAbility and the distribution of its media content by using Akamai.

Besides high-level strategic objectives, *The Plan* provides immediate operational actions designed to initiate the process and ensure that the strategic goals are achieved. Upon approval by the Technology Governance Committees, *The Plan* will be amended to incorporate specific metrics associated with each one of the four strategic objectives.

The Dalet implementation project is not specifically addressed in *The Plan* for several reasons. After substantial initial difficulties associated with poor requirements definition, insufficient budgetary allocations, lack of end-user buy-in and lack of appropriate staff skills, the project has made significant advances and is now

progressing at a relatively steady pace. In general, the project will benefit from the more reliable infrastructure resulting from *The Plan's* implementation. Meanwhile, the project will receive special attention and scrutiny as its Project Manager becomes a dotted line report to the CIO. This new relationship will ensure that the project receives a level of scrutiny and focus commensurate with its relevance to the success of the mission. In addition, as one of the most important entries in the BBG's application portfolio, this project will benefit from the attention and prioritization of the nascent Technology Governance Structure.

Despite the challenges inherent in the current situation, the roadmap for dramatically improving the performance of the Technology organization is relatively clear. The same path has been navigated by myriad companies that found themselves in the same predicament so that, effectively, the BBG does not have to reinvent the wheel in the process of radically improving its technological basis.

It is fundamentally important to understand that **some of the initial remediation tasks might, in the short term, actually increase risk and reduce overall system's availability**. Introducing modifications in a somewhat chaotic and poorly documented infrastructure can often lead to disruption.

The steps outlined in the first year of *The Plan* are far more prescriptive that those put forth for *The Plan's* second year as the BBG continues to implement these new strategies along the same philosophical lines but in an ever-changing media landscape and an ever-improving technology substrate.

III – I – Year 1 (June 2010 - May 2011)

III – I – I – Pan-Technology Initiatives

The activities proposed in this area cut across the entire current Office of Engineering and Technical Services. They are designed to enable a long-term transformational exercise by establishing baseline operational tenets, governance structures, sustainability and systematic and continuous process improvement. It begins with a process of alignment and reorientation of internal and external perceptions designed to position the organization for further progress in Year 2 of the Plan and beyond.

1. **Announce and implement a name change to the organization**

   - "Technology, Services, and Innovation" (TSI)

     The current name of the organization carries connotations to the past that no longer reflect the overall scope of the organization. While its roots are firmly in the classical engineering discipline associated with content distribution through shortwave, medium wave and FM transmissions, today's organization handles a much wider scope of operations that should be reflected in its entirety. The term "Technology" encompasses all of the technical disciplines, is generally seen as forward looking and dynamic, and will set the tone internally as well as to the rest of the world. The term "Services" embodies a dedication to fulfilling the goals of the organization and the needs of its staff as it does so. Finally, the term "Innovation" carries the mantle of discovery, pro-activity, and excellence that was once assumed about the organization but has been somewhat lost in the relentlessness of multi-decadal mission-critical operations.

2. **Implement new organization structure with:**

   - Clear delineation of roles, responsibilities, and expected behavior standards

     Through the removal of most organizational idiosyncrasies and the creation of operational areas around logical discipline boundaries, we

will create an organization with clearer lines of responsibility, more impetus for collaboration and a higher ability to establish accountability and performance measures. Simultaneously, we will establish and disseminate clear standards and expectations for inter-personal behavior, conflict resolution and, if necessary, further escalation.

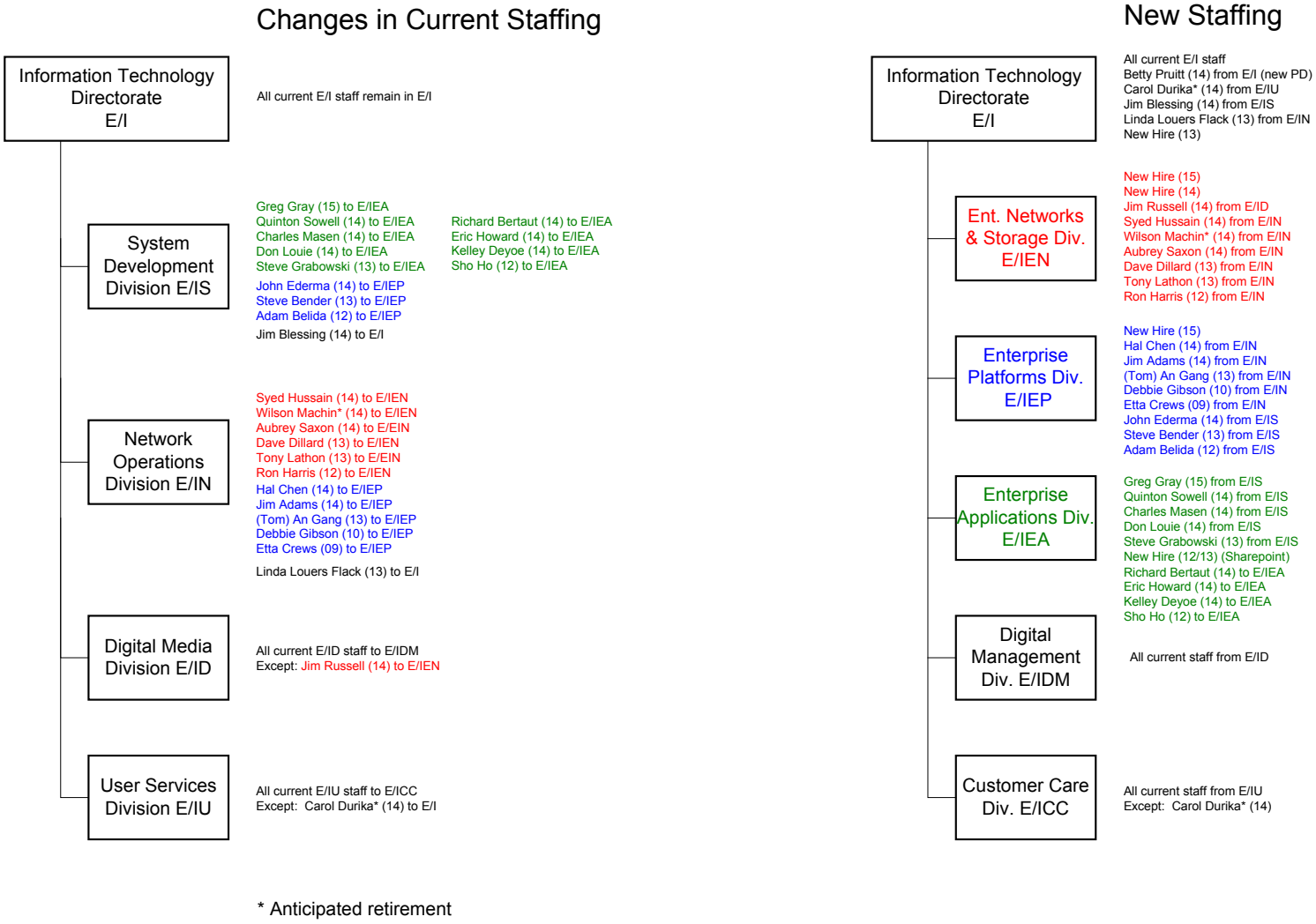
Because of re-programming notification and approval requirements necessitated by the proposed changes in the Engineering area, this organizational re-alignment will take place in two distinct phases as follows:

- IT organization restructure on June 6th. Proposed changes are depicted in Picture 6 on Page 27.
- Engineering restructure shortly after approval by the U. S. Congress of the proposed changes depicted in Picture 7 on Page 28.

❖ Clear delineation of division, managerial, and staff performance expectations

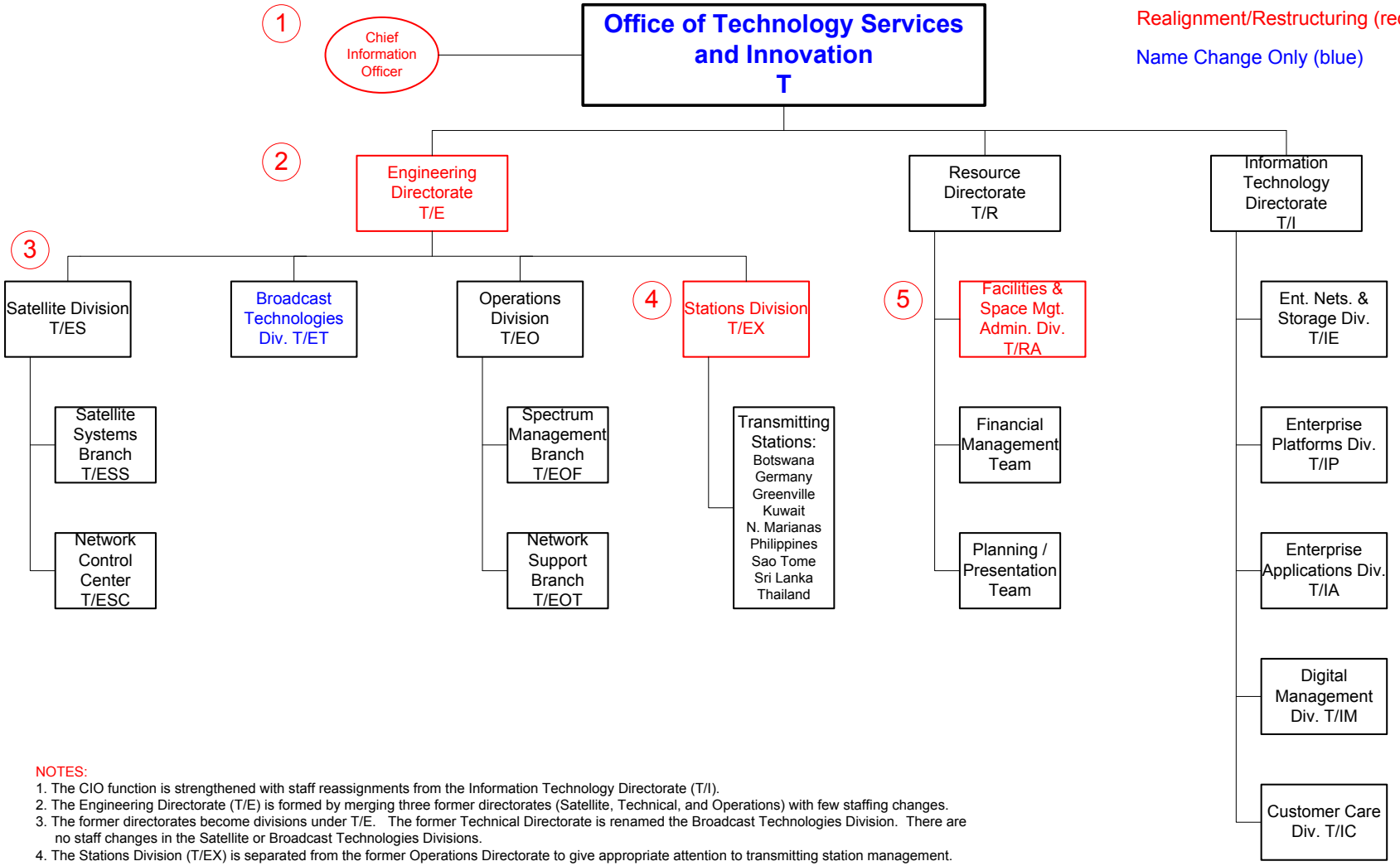
As part of the initial process after introduction of the new organizational framework, each division and area manager will be responsible for the creation and maintenance of performance expectation documents that will guide that particular area through the performance period at hand. This process will offer visibility across the entire Technology organization, encourage transparency when dealing with performance issues, and create a culture of achievement and delivery across the entire workforce.

Proposed Information Technology Realignment (Phase 1)



Picture 6

Proposed Organization



NOTES:
1. The CIO function is strengthened with staff reassignments from the Information Technology Directorate (T/I).
2. The Engineering Directorate (T/E) is formed by merging three former directorates (Satellite, Technical, and Operations) with few staffing changes.
3. The former directorates become divisions under T/E. The former Technical Directorate is renamed the Broadcast Technologies Division. There are no staff changes in the Satellite or Broadcast Technologies Divisions.
4. The Stations Division (T/EX) is separated from the former Operations Directorate to give appropriate attention to transmitting station management.
5. The Facilities & Space Management Administration Division (T/RA) is moved from the former Operations Directorate to the Resource Directorate.

3. <u>Establish an overall technology governance structure</u>

Currently, the technology organization is largely responsible for the creation and administration of its project portfolio. It does so in relative isolation from the senior management of the agency and, as a result, it is burdened with almost complete responsibility for projects that reach deep across the organization and require substantial levels of multi-disciplinary buy-in, cooperation, and change management in order to succeed.

As part of an overall BBG Technology Management Program (described in Appendix A), we will create a three-tiered management process that will effectively make the management of the Technology Portfolio a joint effort across the senior management of the organization, that is closely aligned to and helps drive the agency's overall Strategic Plan. The initial focus of this governance structure will center on the establishment of guidelines that will frame operational tenets, expectations, and service levels enabling the creation of mutually agreed upon and realistic organizational priorities, operational goals, and performance metrics. These are:

- **The establishment of portfolio management principles for projects:**
  - Introduction
  - Discussion
  - Prioritization
  - Progress evaluation
  - Conclusion or termination
- **The establishment of tiered organization Availability Targets for:**
  - Scheduled outages
    Pre-announced outages designed for pro-active and preventive maintenance, upgrades, and other risk mitigation activities.
  - Unscheduled outages
    Outages that arise out of unpredictable human, mechanical or software failure and externally initiated circumstances such as acts of nature, terrorism, cyber-attacks, and other such issues.

- **The establishment of targets and procedures for Business Continuity and/or Disaster Recovery scenarios including:**
  - Short term or partial disruption (less than 24 hours)
  - Medium-term or severe disruption (24 to 96 hours)
  - Long-term or catastrophic disruption (over 96 hours)

4. Establish a BBG Strategic Asset Application/Database

Initiate the discovery and requirements analysis needed to begin the development of an Application/Database designed to catalog, manage, and evaluate the Agency's transmission and content distribution assets (whether owned, leased or shared). Upon completion, this application will drive thoughtful and data-driven decisions on which technologies to use to cost effectively distribute BBG's content to specific target countries by taking in consideration data points such as:

- Implementation Cost
- Relative target market penetration
- Achievable signal quality
- Ease of reception disruption (jamming)
- Availability and effectiveness of other content distribution platforms

5. Establish a BBG Security, Business Continuity, and Disaster Recovery Office

Under the aegis of the Chief Information Security Officer, create a division with broad responsibility for ensuring seamless operation of the entire Technology organization in the face of cyber-security, accidental operational disruption, and other internal and external threats to ongoing business continuity.

In addition, this division will provide the coordination necessary to ensure the update, upgrade, and deployment of the BBG Disaster Recovery Plan, including the creation of the:

- Emergency management (EM) organization

Creation of a cross-discipline EM structure and guiding principles including:

- Membership
- External contacts
- Escalation processes
- Deployment procedures
- Documentation
- Application functionality availability
- Time to deployment expectations
- Funding mechanisms
- Training and testing protocols
- Testing exercise schedules

These five Pan-Technology strategic initiatives will enable the creation of a solid operational framework on which to base the second year deliverables of *The Plan*.

III – I – II – Engineering

Alongside the Pan-Technology initiatives and in addition to its multiple operational engagements, Engineering will tackle four major projects designed to improve its long-term ability to enable the fulfillment of the BBG's mission. These are:

1 - Continue migration to MPEG-4 technology

This latest generation of content encoding, offers superior use of costly bandwidth resources on satellite transponders as well as on terrestrial connections without any discernable loss of audio or video quality. By leveraging this advanced coding/decoding technology across its global distribution network, the BBG can substantially increase the amount of content it can distribute with the same funds and can better prepare itself for the continuing migration of content to higher resolution distribution formats (FM and HDTV).

2 – Initiate the upgrade of the Network control Center (NCC)

Currently, the NCC is occupied by the Engineering staff and systems associated with the distribution of content on a global basis. This work includes the operation and monitoring of the BBG's satellite uplinks and downlinks throughout the world, the operation and monitoring of the BBG's Internet streaming setup, and other systems and activities associated with content distribution. In addition, the NCC is also host to the VOA TV Master Control Operations until such time when the new VOA TV Master Control suite is placed in operation later this year (October 2010). Over time, and as systems have necessarily expanded to accommodate services growth, this co-location has become more burdensome by creating a cluttered, cramped, and somewhat chaotic environment that has and will continue to create operational challenges.

The refurbishment of the NCC is of paramount importance in ensuring continued high reliability of content distribution operations and the freeing up of equipment essential to the setup of Business Continuity and Disaster Recovery installations at the COOP facility.

3 – Execute the outsourcing of station operations in Bangkok and Udorn in Thailand.

Following appropriate due diligence and assuming that it makes sense from both financial and risk mitigation standpoints, prepare and execute the transition of these stations to a vendor-managed environment that preserves the station's operational excellence while simultaneously improving its operating costs and mitigating the stations end-of-useful life risk profile.

4 – Implement more efficient shortwave site management and transmission methodologies

Using any knowledge gleaned for the outsourcing of its operations in Thailand, adopt industry best practices for site administration and management, technical improvements, automation, remote management and overall optimization of risk vs. cost profile for the rest of the BBG shortwave transmission stations.

5 - Research and create a shortwave (SW) sun-setting strategy

Utilizing multiple data points including:

- BBG long-term country and language targeting plans. **A pivotal part of this analysis**, the BBG plans will be the determining factor in the decisions regarding station continuance, potential for outsourcing and ability to implement resource sharing with other global broadcasters.
- In-house research on SW distribution effectiveness
- Additional third party resources on SW penetration and utilization
- Leasing prices and availability

Create a multi-year strategy for physical asset outsourcing, consolidation within BBGs network, schedule consolidation with other broadcasters, and third party leasing that allows the BBG to continually optimize its SW distribution of content in the most thoughtful and pragmatic manner so as to maximize cost effectiveness across all of its distribution vehicles.

III – I – III - Information Technology

Going forward, the BBG IT Directorate will focus a substantial portion of its efforts in the consolidation of its infrastructure into a core set of strategic platforms designed to lower overall infrastructure complexity, increase long-term system integration, reduce total cost of operation and ownership, and enable an easier migration into later stage co-location and cloud computing efforts. Initially, the strategic platforms will include:

- Networking – Ethernet, TCP-IP and Cisco equipment
- Server Hardware – 64 bit x86 processor based servers
- Operating systems – Windows and Red Hat Linux
- Virtualization platform – MS Hyper-V and VMware
- Databases – MS SQL Server and MySQL
- Storage – I-SCSI based systems
- Applications – Browser based interfaces

Substantial effort will be undertaken to systematically eliminate all existing applications and infrastructure components that do not conform to the latest releases of these strategic platforms. In addition, future adoption of any system or application requiring different operating standards will have to **overcome a very high scrutiny threshold** before receiving approval for funding and project prosecution.

Alongside the Pan-Technology initiatives and in addition to its day-to-day operations and ongoing projects, IT will tackle six major items designed to improve its long-term ability to enable the fulfillment of the BBG's mission. These are:

1 – Remediation of its existing cabling infrastructure

On a systematic basis, IT will improve its current cabling plant by establishing and deploying a cabling plan based on industry best practices that includes:

- Cable management surrounding all networking, serve, and storage hardware

- Standards, throughput, and identity verification of every mission-critical cable:

    - Backbone Upstream/downstream connections
    - Server, storage to server, or network connections
    - Critical workstation to network connections

- Cable color coding allowing for immediate identification of:
    - Primary, secondary and tertiary networking connections
    - Storage networking primary and secondary connections
    - IP-based Keyboard-Video-Mouse(KVM) functionality, other Out-of-Band management connections
    - Cluster heartbeat connections
    - Other connections as necessary

2 – Elimination of networking single points of failure

Following on the recommendations of the ongoing network assessment, BBG IT will prioritize and implement a network remediation plan that will address all identified critical single points of failure. Where possible, needed networking hardware purchases will conform to the standards of the expected network virtualization platform that will eventually replace the current generation equipment.

3 – Deployment of a standardized server consolidation/virtualization setup

As part of its platform standardization and server consolidation/virtualization strategic direction, BBG IT will deploy an enterprise class, fully redundant Virtual Server Host platform designed to facilitate a systematic migration and upgrade of all infrastructure, application, and database servers into the chosen strategic platforms.

4 – Refresh end user platforms with function specific setups

Currently, BBG IT deploys one shared desktop image for all of its PC users. Albeit easier to administer from an IT standpoint, this setup encumbers the organization with far higher capital costs for end-user equipment because

everybody's computer must be able to run some computer-intensive applications only used by broadcasters.

Simultaneously, and to accommodate legacy applications, users also are saddled with utilizing a 10-year old Operating System (Windows XP) rather than taking advantages of far superior software.

Going forward, BBG IT will create function specific images based on Windows 7 and will, where appropriate, include support for laptops while also creating a pool of Netbooks to be loaned to travelling staff that require continued access to agency computing resources.

5 – Implement a hosted email, IM, Conferencing and Blackberry server solution

There are multiple reasons for quickly deploying a hosted solution for the BBG's emailing and collaboration platforms. These include:

- Superior integration between e-mail and mobile communication devices
- Resolution of critical Business Continuity and Disaster Recovery gaps
- Operational risk mitigation (Key man exposure, availability, archiving, e-discovery)
- Lowering operational complexity and maintenance burden

6 – Create and/or expand division specific Intranet sites:

The expansion of a well-organized Intranet and the expectation of its usage as a standard business tool will further enable operational transparency, facilitate collaboration, and ensure appropriate record keeping. Amongst its expected contents for each area will be:

- Application portfolio
    - Containing information about each vertical application currently in use by that area

- Technical Asset Inventories
    - Containing up-to-date information on all technical assets currently used by that discipline in fulfilling its obligations

- Online project management updates

- Facilitating status report consistency and efficient dissemination, problem identification, alignment, and resolution efforts across multiple disciplines

- Online real time performance statistics
  - Keeping internal and external stakeholders fully apprised of current performance levels across the infrastructure while enhancing the ability to identify emerging problems, facilitate issue diagnosis, and substantially improve Mean Time to Recovery (MTR)

III – II – Year 2 (June 2011 – May 2012)

III – II – I – Pan-Technology Initiatives

During the 2nd year of *The Plan*, the Technology, Services, and Innovation organization (TSI) will tackle two projects whose reach cuts across its entire scope of authority. In addition, TSI proposes to expand the Governance Structure so that it addresses technology projects within the agency that originate and are executed outside of the TSI organization.

1 - Complete and implement the BBG Strategic Asset Application/Database

Finalize, test, and deploy the BBG Strategic Asset decision support system enabling data-driven distribution platform decisions, anti-censorship strategies, and optimization of content distribution expenses.

2 - Deploy and test BBG Security, Business Continuity (BC) and Disaster Recovery (DR) Office

Formalize, perform, and document two full-scale BC/DR exercises to ascertain agency preparedness in the event of an emergency. Exercise scope and ensuing evaluation will be dictated by the metrics set forth in the Technology Governance Committee meetings.

3 - Expand scope of the Technology Governance Structure

As the Technology Governance Structure demonstrates its ability to prioritize and manage technology projects at an agency strategic level, the scope of its influence should be expanded to include technology projects that originate and are executed by agency areas other than Technology, Services, and Innovation. This expanded scope should include projects driven by VOA Broadcast Operations and the Office of New Media.

III – II – II – Engineering

Alongside the Pan-Technology initiatives, and in addition to its multiple operational engagements, Engineering will tackle three major projects designed to improve its long-term ability to fulfill the BBG's mission. These are:

1 - Complete the upgrade of the Network Control Center

This upgrade will be completed in conformity with the established set of Strategic Platforms, in full compliance with the new cabling and documentation standards and with built-in capability to seamlessly transfer operational control to the designated disaster recovery environment at least to the amount of functionality prescribed by the Technology Governance Committee as part of its deliberations on Business Continuity and Disaster Recovery performance expectations.

2 - Implement Year 1 of the BBG's shortwave sun-setting strategy

Initiate the deployment of the SW sun-setting strategy developed during the first year of *The Plan* in accordance with data acquired from its outsourcing efforts, operational improvements, existing research and input on long-term country and language strategies from the broadcasting entities by:

- Reducing BBG-owned and operated global SW assets, or
- Outsourcing operations of additional transmitting stations, or
- Addressing ongoing needs through resource sharing agreements with other broadcasters, or
- Leasing additional time and frequencies with appropriate third parties that enable financially responsible disposition of lower performing assets, or
- Using a combination of the above items

3 - IP Space Segment and MPLS analysis

Study, recommend, and begin implementation of a project to migrate distribution and backhaul space segments to IP-based terrestrial links in order to improve overall distribution cost structure while maintaining reliability standards.

III – II – III – Information Technology

Alongside the Pan-Technology initiatives and in addition to its multiple operational engagements, IT will tackle major strategic projects designed to improve its long-term ability to fulfill the BBG's mission.

Leveraging the consolidation, virtualization, co-location, and cloud computing strategies initiated in the 1st Year of *The Plan*, IT will substantially reduce the number of datacenters, servers, and storage platforms. This will significantly reduce networking equipment, decentralized HVAC requirements, cabling infrastructure, and operational complexity. These four projects IT will endeavor to complete are:

1 - Consolidate operations from the current 7 separate computer rooms into three (3) Cohen Building datacenters

Through careful analysis of future space, power, and HVAC requirements, IT will further consolidate its mission-critical operations into the three best suited datacenters in the building, releasing additional space for general office use.

2 - Reduce by 50% the number of physical servers from June 2010 levels

By eliminating redundant functionality, deploying virtual clustering solutions across discrete physical hosts, and consolidating testing platforms on dedicated high-density testing platforms, IT will effectively cut the number of physical servers that it maintains by half and reduce operational complexity while simultaneously increasing overall asset use, reliability, and ease of operation.

3 - Downsize the number of storage platforms from the present eight (8) to a maximum of four (4)

Through consolidation onto a new, I-SCSI based, large-storage environment, IT will systematically migrate storage content and functionality from several of its legacy storage solutions, lowering the number of disparate storage technologies and vendors it currently uses while simultaneously increasing storage performance and reliability by introducing more advanced virtual storage capabilities at better price performance ratios.

4 - Eliminate any occurrences of general usage application, utility and storage servers operating in isolation from established datacenter facilities

IT will identify, migrate and decommission all servers within its purview that are operating as point solutions in non- standard IT environments throughout the building.

This process will eliminate single points of failure, prevent unsupported dependencies on mission critical functionality, and ensure that all servers are operated under best practices from security, backup, software compliance and Disaster Recovery standpoints.

Technology Management Program

May 2010

Chief Information Officer

Office of the

Director of Engineering

And

Technical Services

Purpose

The *BBG Technology Management Program* (*BBG Technology Program*) is the overarching structure for managing BBG (Agency) technology, information, systems, processes, and staff, and most importantly, new technology investments and initiatives. The goal of the program is to ensure that Agency technology investments are efficiently and effectively identified, selected, implemented, and managed.

The *BBG Technology Program* shown in Figure 1 consists of a *Technology Strategy Framework* that helps define Agency technology investment goals and objectives, a *Technology Governance Structur*e that selects and implements investments, a *Technology Investment Management Process* that guides the governance structure through the selection and implementation process, and a set of *Technology Standards and Policies* to which investments must adhere.

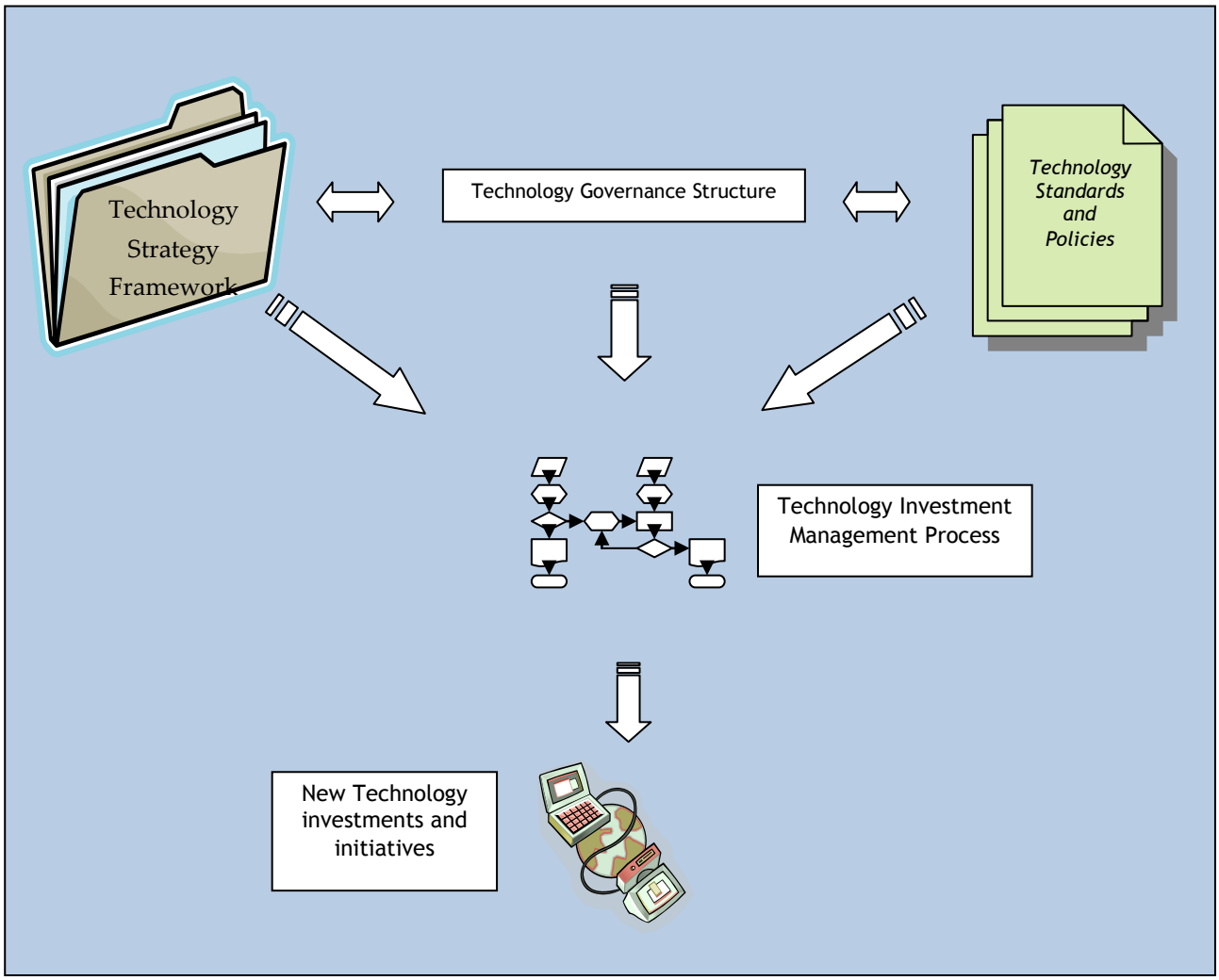


Figure 1: BBG Technology Management Program

Responsibility

The Agency's Chief Information Officer (CIO), from the Office of engineering & Technical Services, is responsible for developing, maintaining and enforcing the *BBG Technology Management Program*. The CIO may revise the program as needed based on input from senior BBG management.

Authority

The *Clinger-Cohen Act of 1996*, the *Paperwork Reduction Act of 1980*, FISMA, and *Office of Management and Budget Circular A-130* require agencies to establish a "comprehensive approach for executive agencies to improve the acquisition and management of their information resources"[1].

Scope

The *BBG Technology Program* extends to all engineering and information technology systems and staff and to all technology investment activities for the BBG federal entities; i.e., the International Broadcasting Bureau (IBB) and the Office of Cuba Broadcasting, regardless of size or complexity, for all physical locations of the BBG federal entities.

Exceptions to or delegations of the scope of the *BBG Technology Program* must be authorized in writing by the CIO.

BBG Technology Program

BBG Technology Strategy Framework

The BBG Strategic Plan guides most Agency activities. The plan describes the mission and strategic goals and objectives of the Agency as articulated by the Agency's Board of Governors for a prescribed period of time. Using the BGG Strategic Plan and other critical input as a guide, the BBG CIO develops the BBG *Technology Strategic Plan* that describes how the Agency will use various engineering and information technologies to support the Agency mission over that same timeframe. As shown in Figure 2, other inputs to the plan include federal technology-related statutes, directives, and guidance, and Agency administrative needs such as human resources, contracting, etc. The *Technology Strategic Plan's* goals and objectives are documented in the *BBG Technology Enterprise Architecture*

[1] http://www.whitehouse.gov/omb/circulars_a130_a130trans4/

(EA) "target state"[2], that is, where the Agency would like its technology investments to be in the future. Finally, the *Technology Governance Structure* creates and maintains the *BBG Technology Investment Portfolio*[3] which is used to prioritize and track investments corresponding to the *BBG Technology Enterprise Architecture Transition Plan*.

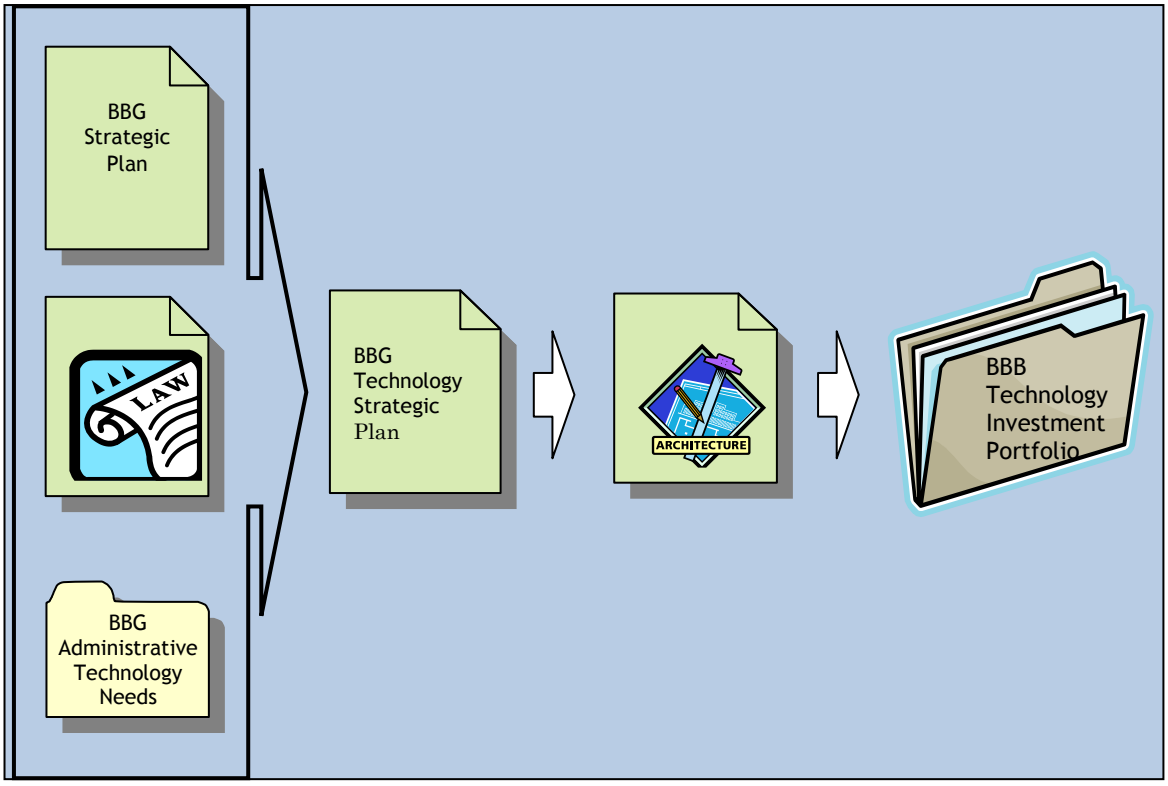


Figure 2: BBG Technology Strategy Framework

BBG Technology Governance Structure

The BBG Technology Governance Structure selects and implements the investments that meet the goals of the BBG Technology Strategic Plan. The basic structure is shown in Figure 3. The key roles and responsibilities described below refer to the structure anticipated to be implemented in the second phase of the reorganization of the IBB Office of Engineering and Technical Services.

[2] The BBG Technology Enterprise Architecture is comprised of a "current state" that documents current technology investments, a "target state" that documents a future state, and a "transition plan" that describes a series of investments that move the Agency from the current state to the target state.
[3] The BBG Technology Investment Portfolio is a prioritized list of all technology investments that takes into account investment dependencies, available resources, and their status.

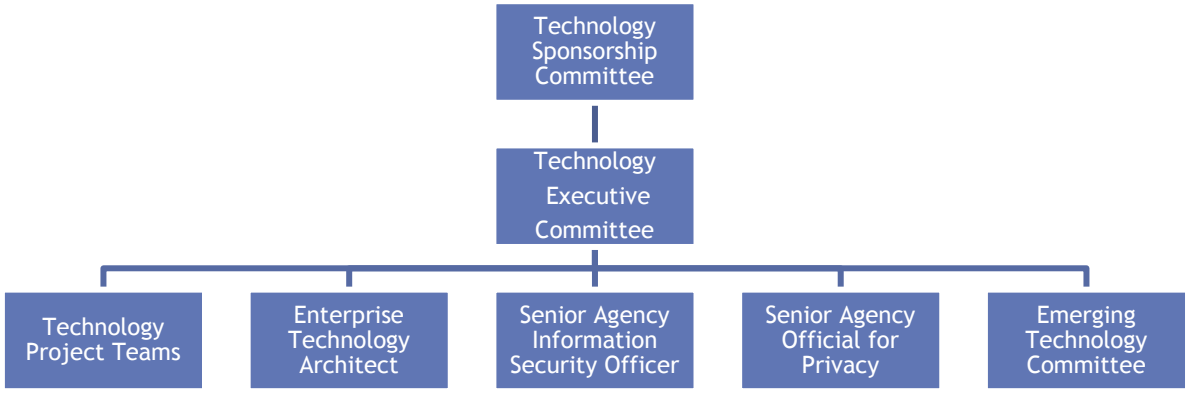


Figure 3: BBG Technology Governance Structure

BBG Chief Information Officer (CIO)

The BBG CIO has overall responsibility for defining and meeting the Agency's strategic technology goals and objectives. The CIO chairs the BBG Technology Sponsorship and Executive Committees. The respective staffs of the International Broadcasting Bureau Information Technology Directorate, Engineering Directorate, and CIO report to him.

BBG Technology Sponsorship Committee (Sponsorship Committee)

The Sponsorship Committee is the highest decision-making authority within the Agency's Technology Governance Structure. Composed of the most senior personnel in the Agency, the Sponsorship Committee effectively *owns* all major technology initiatives. As owner of these initiatives, the Sponsorship Committee is ultimately responsible for their strategic success or failure; thus, it is the most important committee within the Technology Governance Structure.

BBG Technology Executive Committee (Executive Committee)

The Executive Committee is the highest technology implementation authority within the Agency's Technology Governance Structure. Composed of area and division directors, the Executive Committee has overall responsibility for planning, coordinating, and monitoring technology solutions implemented to achieve the strategic goals and objectives of the Sponsorship Committee. The Executive Committee has ultimate responsible for the functional success or failure of these technology solutions.

Technology Project Teams

Composed of area specific subject matter experts, technology project teams are responsible for assessing, planning, developing, acquiring, and implementing the technologies selected and approved by the Sponsorship and Executive Committees.

IBB Information Technology (IT) Directorate

The IBB IT Directorate is responsible for implementing, operating, and maintaining IBB information technology investments through the duration of their systems development life-cycle.

IBB Engineering Directorate

The IBB Engineering Directorate is responsible for implementing, operating, and maintaining IBB engineering investments through the duration of their systems development life-cycle.

BBG Emerging Technology Teams

Emerging technology teams are sanctioned by the Executive Committee to investigate if and how new technologies can be used to support the Agency mission. The goal is to lend some structure to what in the past have often been ad-hoc and poorly defined efforts. Emerging Technology Teams receive authorization, support, and resources from the Executive Committee and regularly report back their findings.

BBG Enterprise Technology Architect (Architect)

The BBG Enterprise Technology Architect is responsible for documenting the goals and objectives of the BBG Technology Strategic Plan as the *target state* of the Agency's Technology Enterprise Architecture (EA). The Architect also documents the *transition plan* for moving from the *current state* to the *target state*. In addition, the Architect performs critical reviews of proposed projects for fit and agreement with the BBG Technology EA.

BBG Chief Senior Agency Information Security Official (SAISO)

By statute, the SAISO reports to the CIO and is responsible for developing Agency information security programs, policies, and procedures to ensure compliance with federal information security statutes and directives, such as the Federal Information Security Management Act (FISMA). The SAISO develops Agency policies and procedures for implementing information security technologies and best practices to ensure the confidentiality, integrity, and availability of BBG information assets. The SAISO also performs critical reviews of how well proposed projects fit and agree with Agency information security policies and procedures.

Senior Agency Official for Privacy (SAOP)

The SAOP reports to the CIO and is responsible for developing Agency information privacy programs, policies, and procedures to ensure compliance with federal information privacy statutes and directives, such as the Privacy Act and eGov Act to protect personally identifiable information (PII). The SAOP also performs critical reviews of how well proposed projects fit and agree with Agency information privacy policies and procedures.

BBG Technology Investment Management Process

The BBG Technology Investment Management Process is a collection of workflow procedures that define how technology investments are managed through their system life-cycle. The procedures are a framework that overlays a typical systems development life-cycle (SDLC) model over the BBG Technology Governance Structure. Critical to the procedures are investment evaluation and decision points, commonly referred to as "gates." The purpose of guiding investments through these procedures and gates is to ensure that they are appropriately reviewed, that adequate resources are allocated and progress monitored during implementation, and that investments are periodically reviewed after they are placed in operation.

BBG Technology Standards and Policies

All technology investments must adhere to the Agency's technology standards and policies. Some standards and policies are based on federal statutes and guidance such

as FISMA, the Federal Desktop Core Configuration (FDCC), and the Trusted Internet Connection (TIC) initiatives. Some are based on telecommunication standards as defined by the International Telecommunication Union. Other standards and policies are Agency specific.

Documentation and Communication

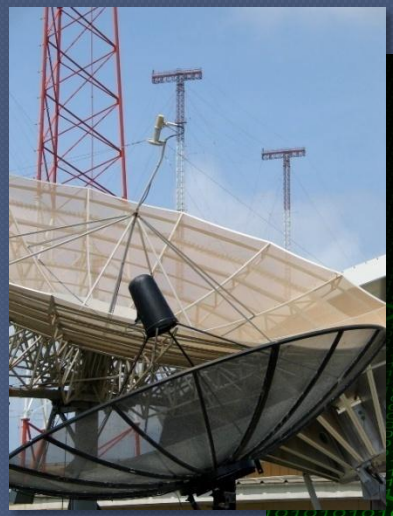
The Technology Management Program's activities are documented and communicated with the Agency's collaboration and knowledge management tool. All plans, decisions, policies, standards, and committee notes and documents are stored in the tool where they are available for review by authorized staff.

Appendix B

Data Center Consolidation Initiative

Appendix C
Virtualization Study

BBG Technology Update - 2009



BBG New Media: Present Reality, Future Prospects

Broadcasting
Board of
Governors

Broadcasting Board of Governors

BBG New Media

Presentation Summary

New media figure prominently in BBG strategy despite current, low audience numbers, as global trends point to progressively higher take-up rates among key demographic segments. BBG new media services must be increasingly sophisticated, targeted, and competitive – on the understanding that interference by repressive governments can thwart our best efforts.

Broadcasting Board of Governors

BBG New Media

Preliminary Points

Broadcasting Board of Governors

BBG New Media

Conceptualizing "New Media"

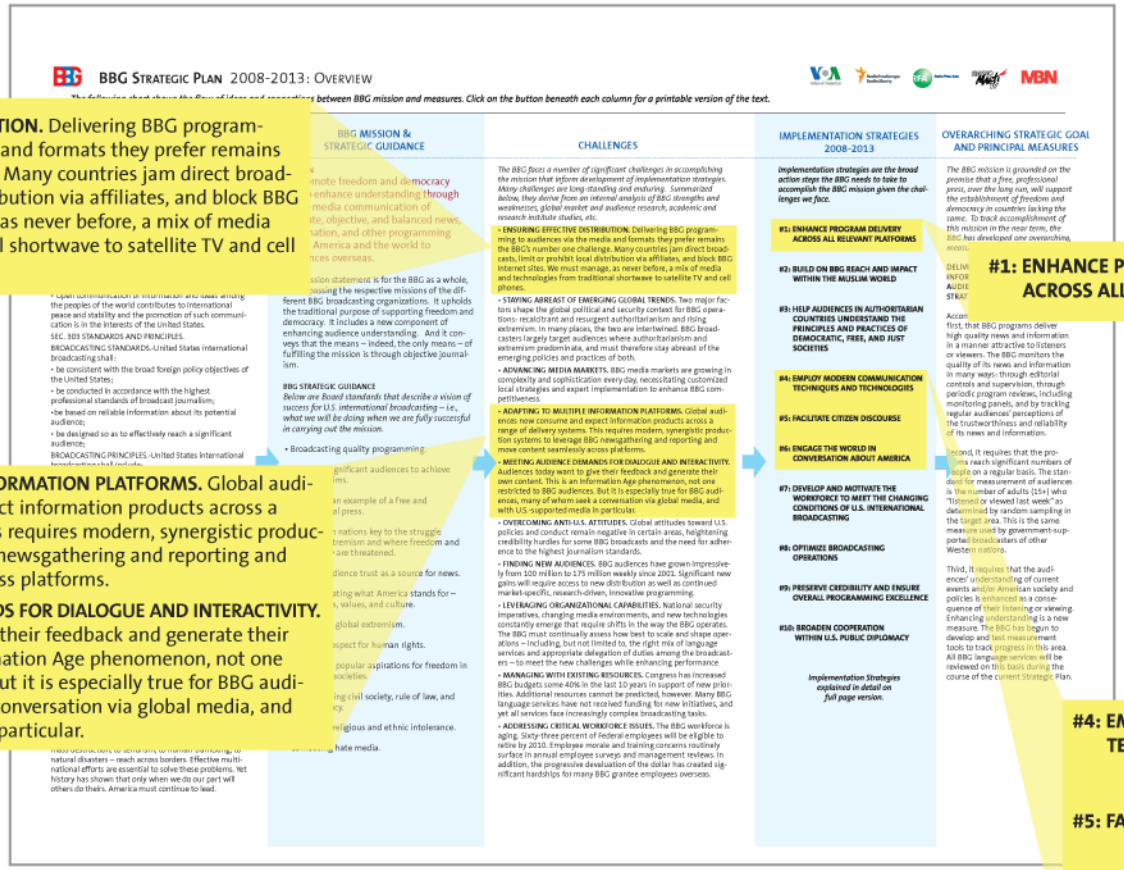
- "New Media" as technology
  - Using new technologies as means of accessing traditional media

- "New Media" as new media
  - Using new technologies to engage in new forms of vertical and (especially) lateral communication

Broadcasting Board of Governors

New Media in BBG Strategy

BBG New Media



BBG STRATEGIC PLAN 2008-2013: OVERVIEW

The following chart shows the flow of ideas and connections between BBG mission and measures. Click on the button beneath each column for a printable version of the text.

VOA MBN

BBG MISSION & STRATEGIC GUIDANCE

...mote freedom and democracy
...enhance understanding through
...media communication of
...ate, objective, and balanced news,
...nation, and other programming
...America and the world to
...nces overseas.

...ssion statement is for the BBG as a whole, ...ssing the respective missions of the dif-ferent BBG broadcasting organizations. It upholds the traditional purpose of supporting freedom and democracy. It includes a new component of enhancing audience understanding. And it con-veys that the means – indeed, the only means – of fulfilling the mission is through objective journal-ism.

BBG STRATEGIC GUIDANCE

Below are Board standards that describe a vision of success for U.S. international broadcasting – i.e., what we will be doing when we are fully successful in carrying out the mission.

- Broadcasting quality programming.

...gnificant audiences to achieve ...ims.

...n example of a free and ...al press.

...n nations key to the struggle ...xtremism and where freedom and ...are threatened.

...dience trust as a source for news.

...ating what America stands for – ..., values, and culture.

...global extremism.

...spect for human rights.

...popular aspirations for freedom in ...societies.

...ing civil society, rule of law, and ...cy.

...religious and ethnic intolerance.

...ghate media.

...natural disasters – reach across borders. Effective multi-national efforts are essential to solve these problems. Yet history has shown that only when we do our part will others do theirs. America must continue to lead.

CHALLENGES

The BBG faces a number of significant challenges in accomplishing the mission that inform development of implementation strategies. Many challenges are long-standing and enduring. Summarized below, they derive from an internal analysis of BBG strengths and weaknesses, global market and audience research, academic and research institute studies, etc.

- **ENSURING EFFECTIVE DISTRIBUTION.** Delivering BBG programming to audiences via the media and formats they prefer remains the BBG's number one challenge. Many countries jam direct broadcasts, limit or prohibit local distribution via affiliates, and block BBG Internet sites. We must manage, as never before, a mix of media and technologies from traditional shortwave to satellite TV and cell phones.
- **STAYING ABREAST OF EMERGING GLOBAL TRENDS.** Two major factors shape the global political and security context for BBG operations: recalcitrant and resurgent authoritarianism and rising extremism. In many places, the two are intertwined. BBG broadcasters largely target audiences where authoritarianism and extremism predominate, and must therefore stay abreast of the emerging policies and practices of both.
- **ADVANCING MEDIA MARKETS.** BBG media markets are growing in complexity and sophistication every day, necessitating customized local strategies and expert implementation to enhance BBG competitiveness.
- **ADAPTING TO MULTIPLE INFORMATION PLATFORMS.** Global audiences now consume and expect information products across a range of delivery systems. This requires modern, synergistic production systems to leverage BBG newsgathering and reporting and move content seamlessly across platforms.
- **MEETING AUDIENCE DEMANDS FOR DIALOGUE AND INTERACTIVITY.** Audiences today want to give their feedback and generate their own content. This is an Information Age phenomenon, not one restricted to BBG audiences. But it is especially true for BBG audiences, many of whom seek a conversation via global media, and with U.S.-supported media in particular.
- **OVERCOMING ANTI-U.S. ATTITUDES.** Global attitudes toward U.S. policies and conduct remain negative in certain areas, heightening credibility hurdles for some BBG broadcasts and the need for adherence to the highest journalism standards.
- **FINDING NEW AUDIENCES.** BBG audiences have grown impressively from 100 million to 175 million weekly since 2001. Significant new gains will require access to new distribution as well as continued market-specific, research-driven, innovative programming.
- **LEVERAGING ORGANIZATIONAL CAPABILITIES.** National security imperatives, changing media environments, and new technologies constantly emerge that require shifts in the way the BBG operates. The BBG must continually assess how best to scale and shape operations – including, but not limited to, the right mix of language services and appropriate delegation of duties among the broadcasters – to meet the new challenges while enhancing performance
- **MANAGING WITH EXISTING RESOURCES.** Congress has increased BBG budgets some 40% in the last 10 years in support of new priorities. Additional resources cannot be predicted, however. Many BBG language services have not received funding for new initiatives, and yet all services face increasingly complex broadcasting tasks.
- **ADDRESSING CRITICAL WORKFORCE ISSUES.** The BBG workforce is aging. Sixty-three percent of Federal employees will be eligible to retire by 2010. Employee morale and training concerns routinely surface in annual employee surveys and management reviews. In addition, the progressive devaluation of the dollar has created significant hardships for many BBG grantee employees overseas.

IMPLEMENTATION STRATEGIES 2008-2013

Implementation strategies are the broad action steps the BBG needs to take to accomplish the BBG mission given the challenges we face.

- **#1: ENHANCE PROGRAM DELIVERY ACROSS ALL RELEVANT PLATFORMS**
- **#2: BUILD ON BBG REACH AND IMPACT WITHIN THE MUSLIM WORLD**
- **#3: HELP AUDIENCES IN AUTHORITARIAN COUNTRIES UNDERSTAND THE PRINCIPLES AND PRACTICES OF DEMOCRATIC, FREE, AND JUST SOCIETIES**
- **#4: EMPLOY MODERN COMMUNICATION TECHNIQUES AND TECHNOLOGIES**
- **#5: FACILITATE CITIZEN DISCOURSE**
- **#6: ENGAGE THE WORLD IN CONVERSATION ABOUT AMERICA**
- **#7: DEVELOP AND MOTIVATE THE WORKFORCE TO MEET THE CHANGING CONDITIONS OF U.S. INTERNATIONAL BROADCASTING**
- **#8: OPTIMIZE BROADCASTING OPERATIONS**
- **#9: PRESERVE CREDIBILITY AND ENSURE OVERALL PROGRAMMING EXCELLENCE**
- **#10: BROADEN COOPERATION WITHIN U.S. PUBLIC DIPLOMACY**

Implementation Strategies explained in detail on full page version.

OVERARCHING STRATEGIC GOAL AND PRINCIPAL MEASURES

The BBG mission is grounded on the premise that a free, professional press, over the long run, will support the establishment of freedom and democracy in countries lacking the same. To track accomplishment of this mission in the near term, the BBG has developed one overarching, media...

DELIV... INFOR... AUDIE... STRAT...

Accor... first, that BBG programs deliver high quality news and information in a manner attractive to listeners or viewers. The BBG monitors the quality of its news and information in many ways: through editorial contents and supervision, through periodic program reviews, including monitoring panels, and by tracking regular audiences' perceptions of the trustworthiness and reliability of its news and information.

Second, it requires that the pro... ...ms reach significant numbers of people on a regular basis. The stan-dard for measurement of audiences is the number of adults (15+) who "listened or viewed last week" as determined by random sampling in the target area. This is the same measure used by government-sup-ported broadcasters of other Western nations.

Third, it requires that the audi-ences' understanding of current events and/or American society and policies is enhanced as a conse-quence of their listening or viewing. Enhancing understanding is a new measure. The BBG has begun to develop and test measurement tools to track progress in this area. All BBG language services will be reviewed on this basis during the course of the current Strategic Plan.

• **ENSURING EFFECTIVE DISTRIBUTION.** Delivering BBG programming to audiences via the media and formats they prefer remains the BBG's number one challenge. Many countries jam direct broadcasts, limit or prohibit local distribution via affiliates, and block BBG Internet sites. We must manage, as never before, a mix of media and technologies from traditional shortwave to satellite TV and cell phones.

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#1: ENHANCE PROGRAM DELIVERY ACROSS ALL RELEVANT PLATFORMS

#4: EMPLOY MODERN COMMUNICATION TECHNIQUES AND TECHNOLOGIES

#5: FACILITATE CITIZEN DISCOURSE

#6: ENGAGE THE WORLD IN CONVERSATION ABOUT AMERICA

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BBG New Media

The Perspective Looking At BBG Global Audience Figures

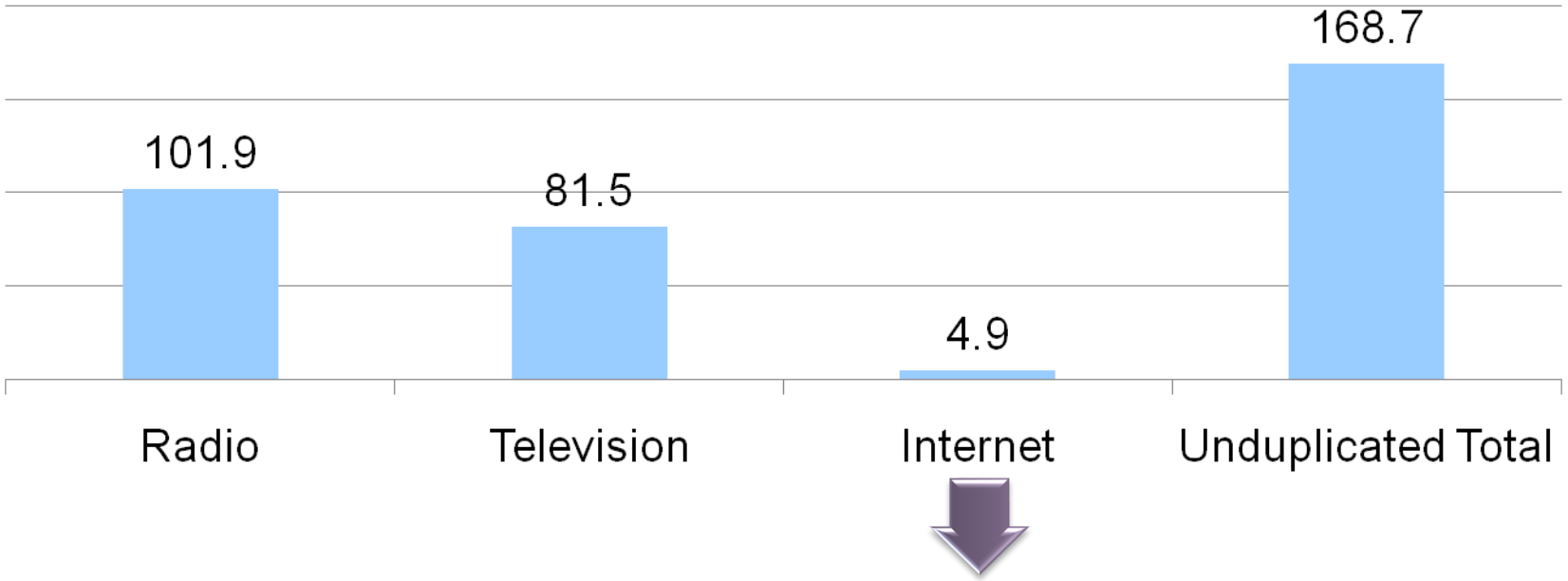
Broadcasting Board of Governors

BBG Global Audience by Medium

(Based on BBG global survey research)

BBG New Media

Weekly Reach of BBG Broadcasts By Platform (in millions)



The ***unique*** audience contribution of the Internet is 2.4 million, or 1.4% of the unduplicated total audience.

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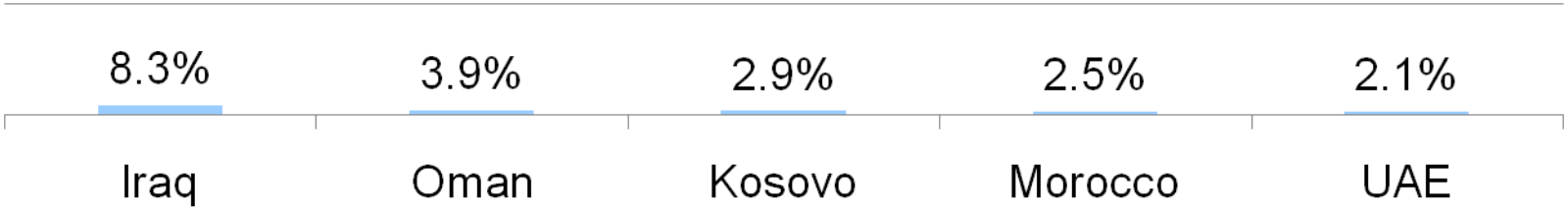
BBG Internet Audiences

BBG New Media

Where are the largest BBG Internet audiences?

Top 5 Weekly Reach Percentage



Top 5 Projected Audiences (in millions)

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BBG New Media

How Much Do New Media Matter?

The relatively low numbers for global BBG Internet penetration raise a relevant question: Despite the rise of new media and their relevance going forward, are they being over-sold as an alternative to traditional media? An article in the current issue of Foreign Policy magazine reflects the current debate, arguing one side of it.

Broadcasting Board of Governors

BBG New Media

Revolution in a Box

It's not Twitter or Facebook that's reinventing the planet. Eighty years after the first commercial broadcast crackled to life, television still rules our world. And let's hear it for the growing legions of couch potatoes: All those soap operas might be the ticket to a better future after all.

BY CHARLES KENNY | November/December 2009

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BBG New Media

The Perspective Looking At Global Trends for New Media

Broadcasting Board of Governors

BBG New Media

The Importance of New Media

- For some BBG services, Internet already rivals broadcast as audience builder.
- New media are what young people (the middle aged of tomorrow!) are using.
- Once established, new media may “crowd out” other sources, especially for news.

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BBG New Media

- New media are changing patterns of information consumption.
- New media are spreading rapidly to previously un-served populations – especially via mobile.
- Usage already greatest among educated, urban, cosmopolitan populations – those historically most attracted to international broadcasters' offerings.

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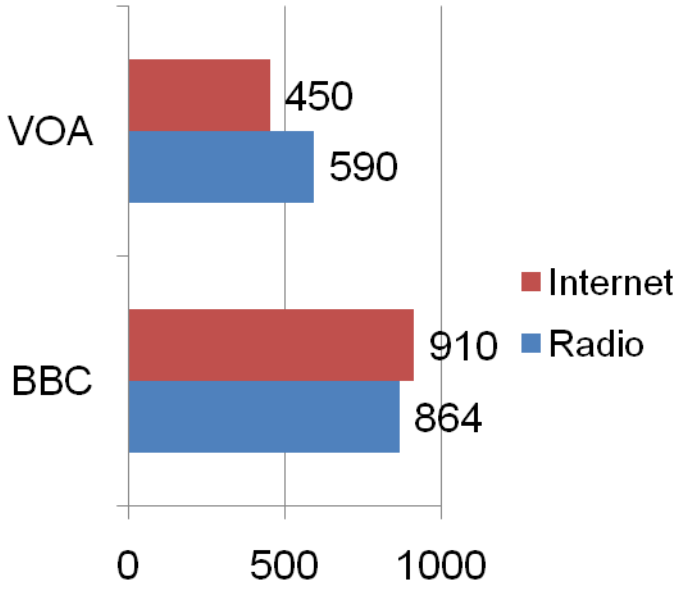
BBG New Media

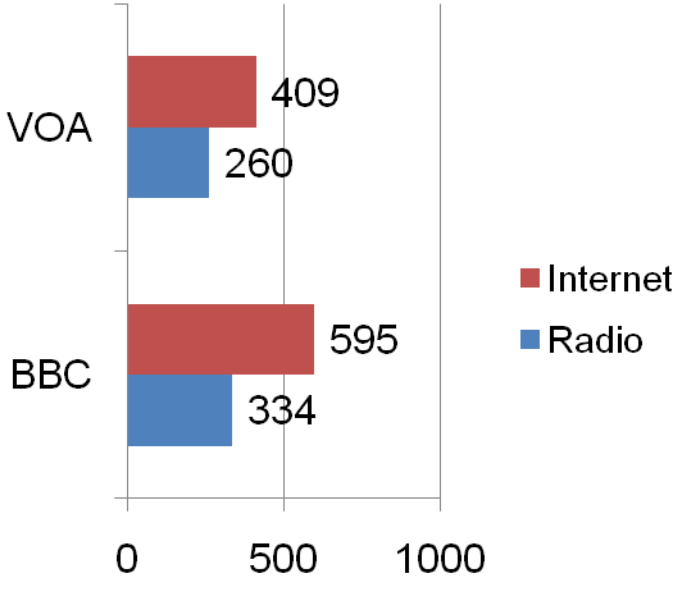
VOA and BBC Audiences During the Iranian Elections: Internet vs. Radio

Q. "*Which of the following radio stations/websites have you been using to stay informed about the Presidential elections and the protests?*"

All Adults



Ages 15-29



Audiences in thousands. Source: InterMedia national telephone survey of Iran; July 2009. n=1005

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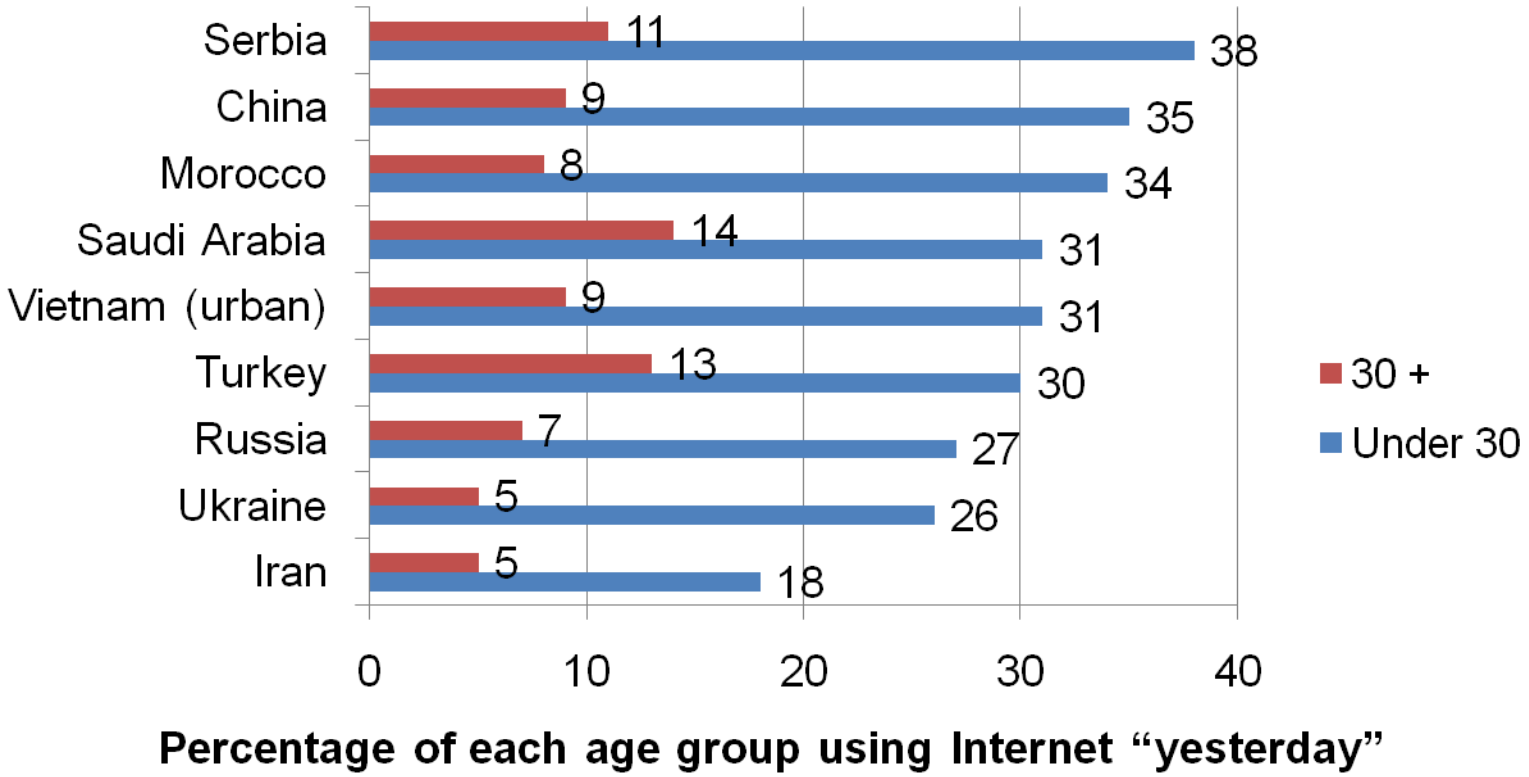
Daily Internet Use: Under 30 vs. Over



Source: InterMedia surveys.

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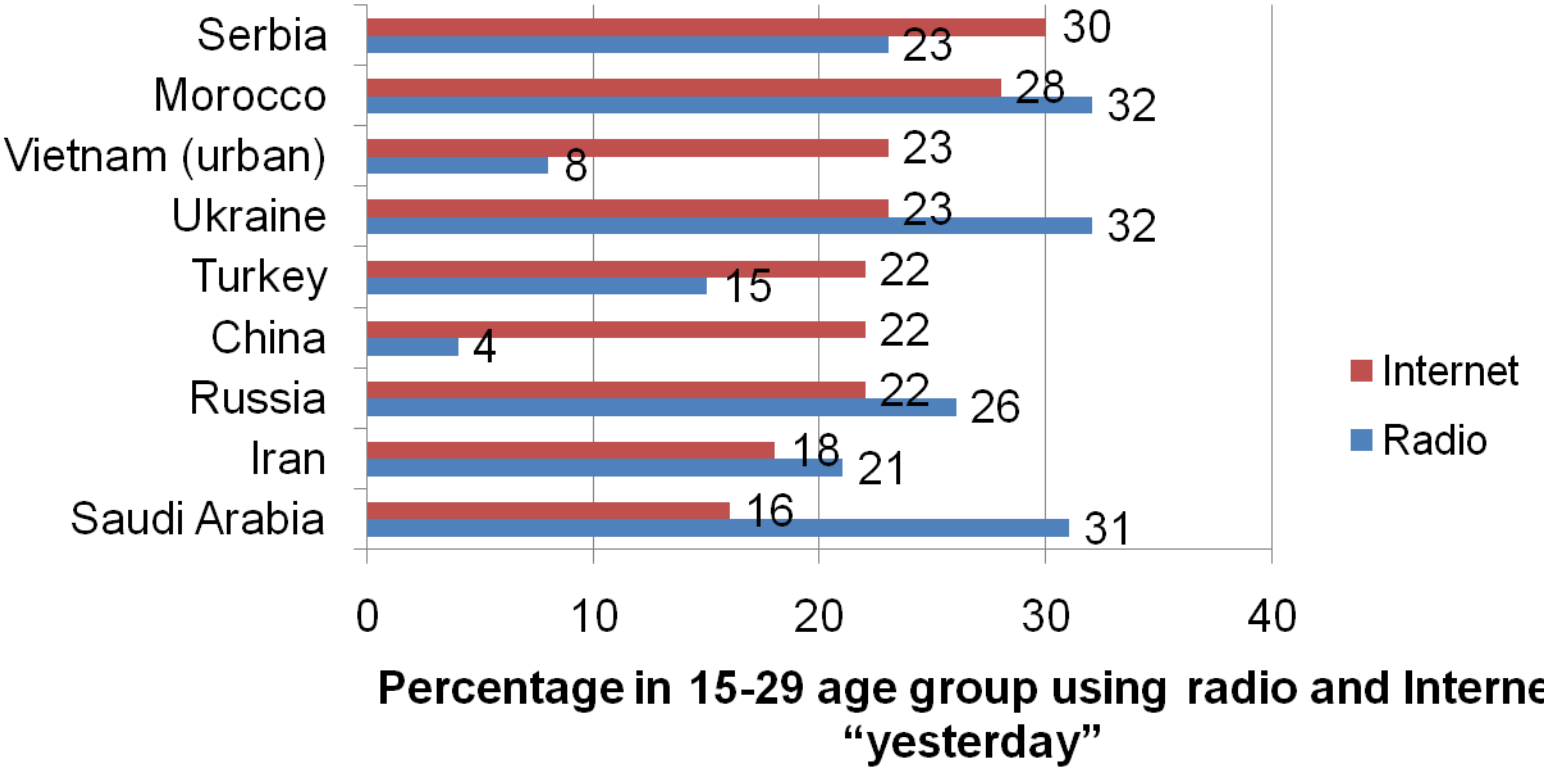
Internet vs. Radio for News: Ages 15-29



Source: InterMedia Surveys

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…and now a word from the early adopters…

BBG New Media

- "I would say I am a Facebook addict; when I wake up in the middle of the night I go to Facebook and before I go to sleep I am on Facebook." *(Kenya)*
- "I do not read newspapers. I download stuff from the Net." *(Kenya)*
- "The first thing I do (in the morning) is turn on my computer and then brush my teeth and wash face." *(China)*
- "(Social networking has brought a) mini-revolution to women – they can now meet men before they are married … stay in touch with friends when housebound …. New media provide an opportunity for privacy that was previously hard to find in traditional Pakistani family-oriented society." *(Analyst's report, Pakistan)*

Source: IBB "New Media" studies

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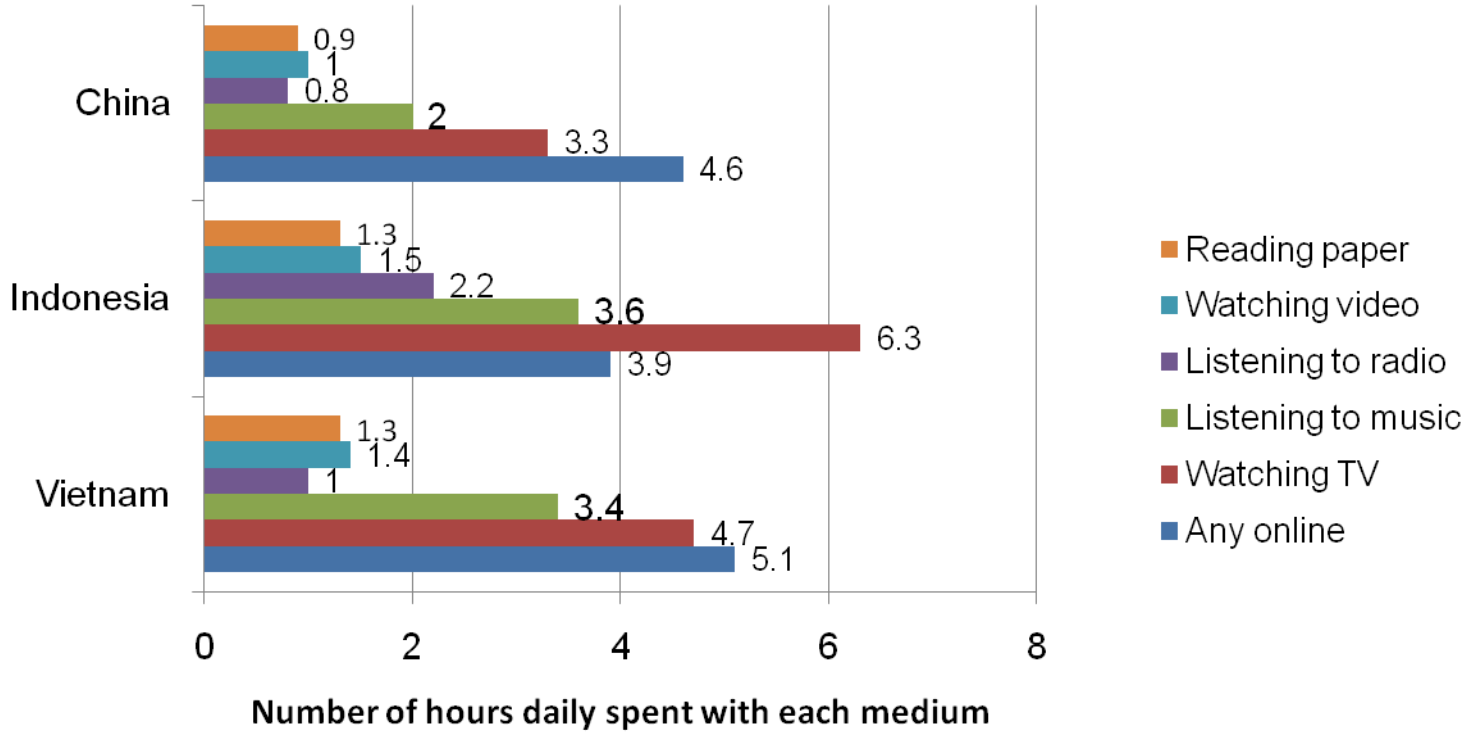
Hours Spent Daily with Different Media



Source: Synovate "Young Asians" study; "early adopters", age 15-24.

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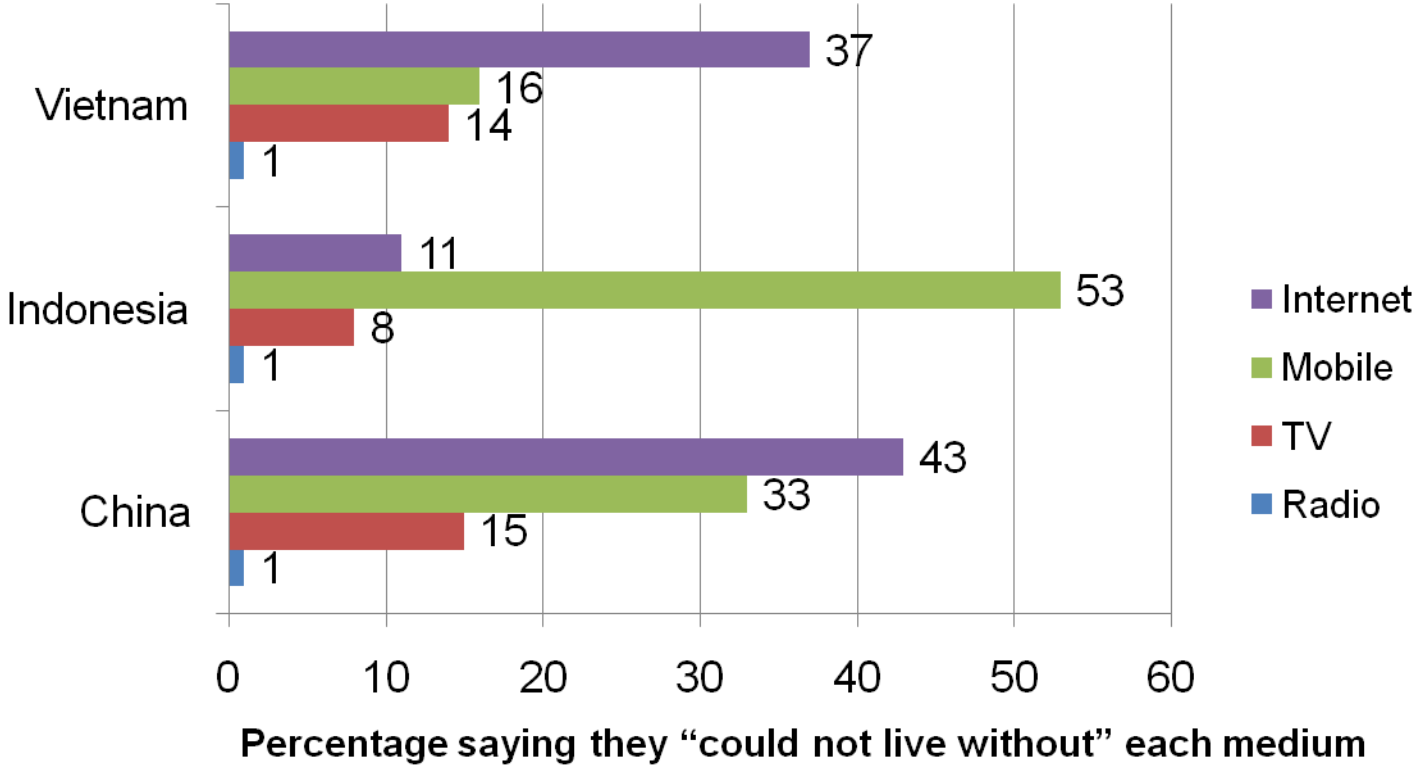
"Which Communications Channel Could You Not Live Without?"



Source: Synovate "Young Asians" study; "early adopters", age 15-24

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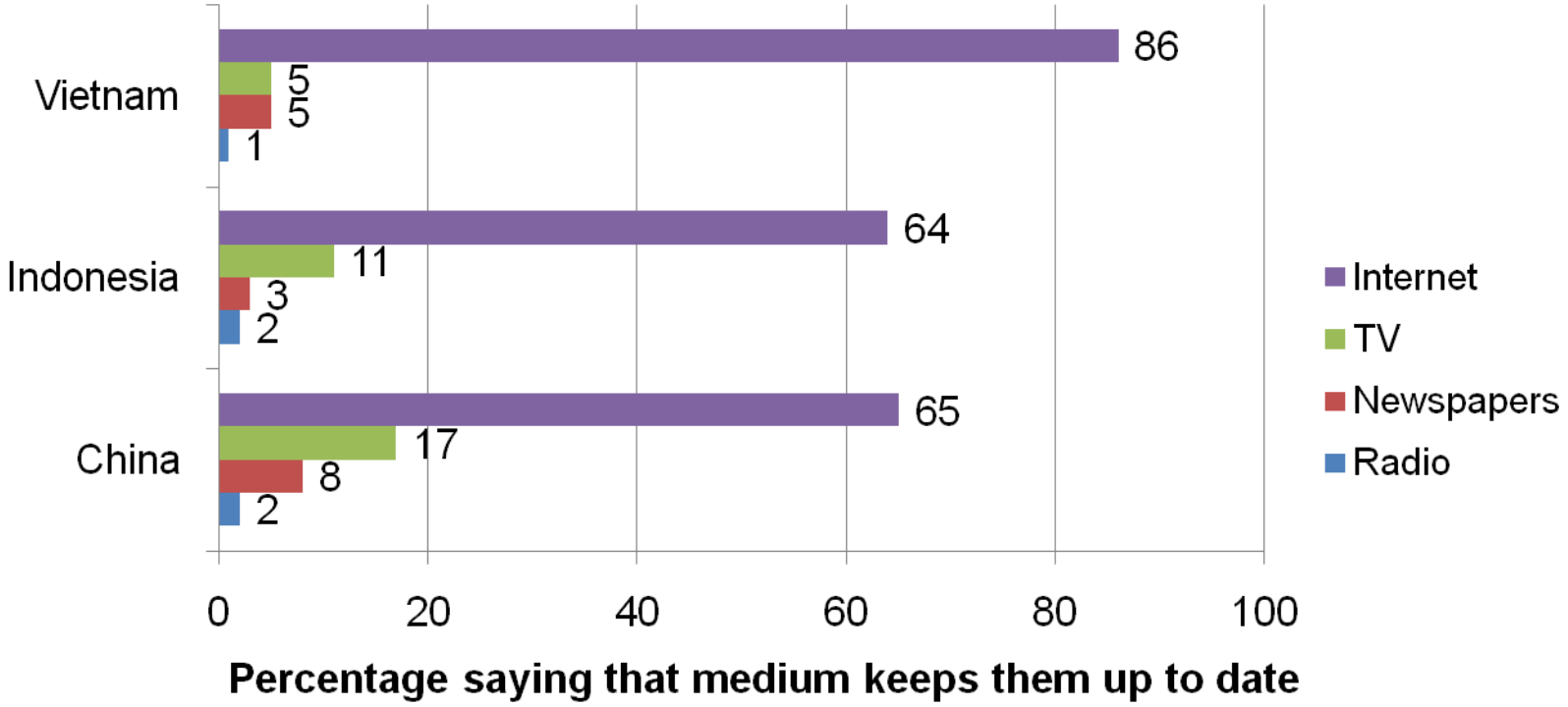
"Which Communications Channel Keeps You Up To Date?"



Source: Synovate "Young Asians" study; "early adopters", age 15-24

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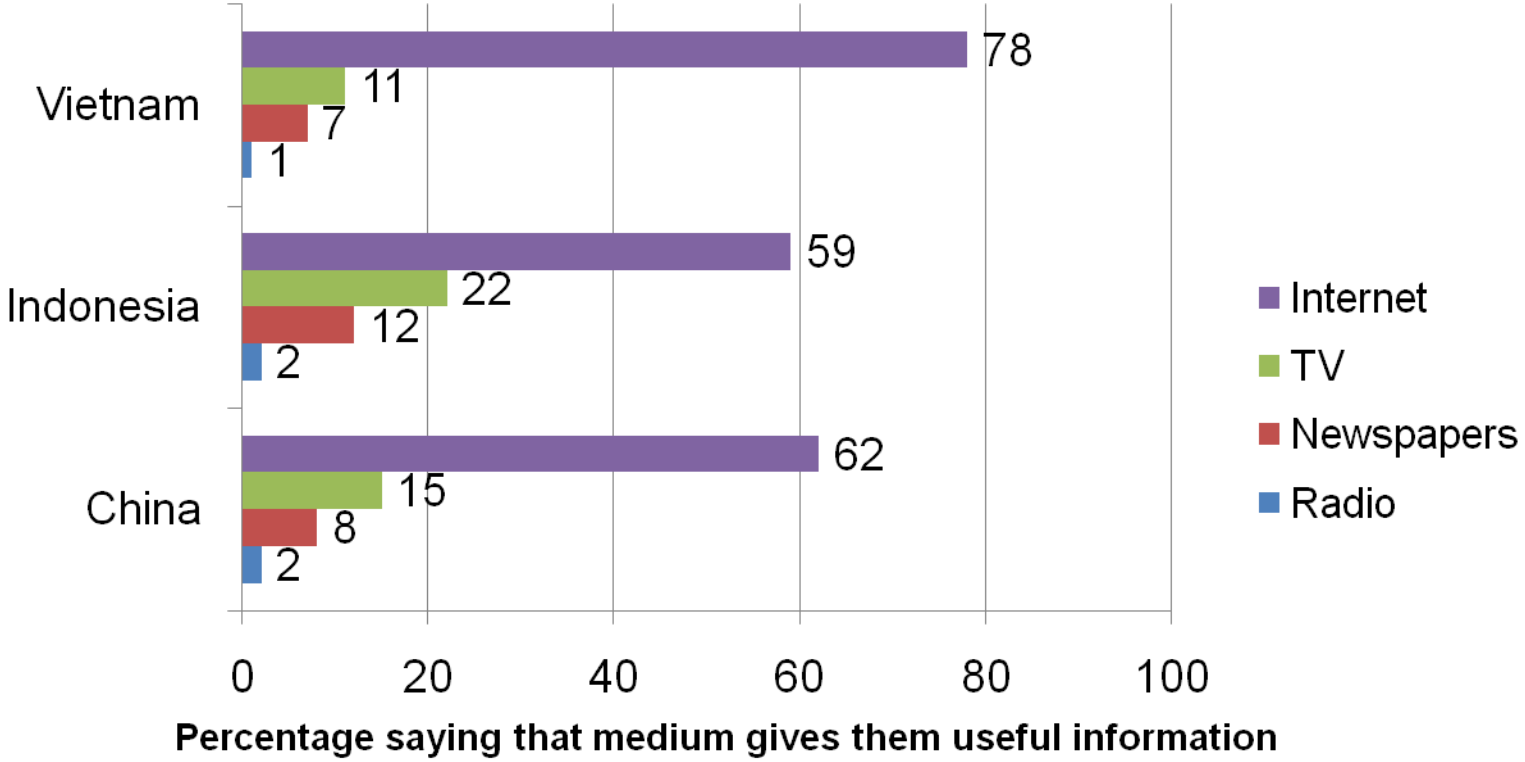
"Which Communications Channel Gives You Useful Information?"



Source: Synovate "Young Asians" study; "early adopters", age 15-24

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BBG New Media

How New Media Change the Game

- **News any time/any place**
  - "I can get whatever I want on the go; I don't need to sit down and wait for 7 PM or 9PM to get my news." (Nigeria)
- **Exploitation of multiple information sources**
  - "In times of crisis, like the attack on the Sri Lankan team, I access the mobile phone, Internet, and TV almost at the same time." (Pakistan)
- **Blurring of distinction between traditional news media and other**
  - "Rather than the BBC, CNN, or domestic news channel websites, (Pakistan new media users) are using such alternatives as YouTube, and Facebook or simply typing in stories to Google ." (Pakistan analyst's report)

Quotes from IBB "new media" studies

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BBG New Media

Drivers of New Media Access

- Overall growth of mobile market
- Build-out of more advanced mobile networks
- Lower cost handsets with more advanced data capabilities
- Improved infrastructure for int'l data flow/lower bandwidth costs
- Government policies promoting Internet access
- In most countries, technical infrastructure in place; cost is primary remaining constraint

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Mobile Phone Use in Selected BBG Target Countries

BBG New Media

	IRAQ* Nov 2008	OMAN Jan 2009	JORDAN Jan 2009	KOSOVO Jul 2009	KENYA Apr 2009
Household access to mobile phone	99%	97%	96%	97%	64%
	Percentage of those with access to mobile phone in household who used a mobile phone for each activity in the past 7 days				
Text messaging	67%	98%	73%	58%	65%
Receive news via SMS	3%	4%	2%	<1%	4%
Send/receive MMS	na	na	na	7%	6%
Download/ view video	38%	25%	17%	7%	3%
Access the Internet	15%	12%	3%	3%	5%
E-mail	10%	9%	2%	2%	3%
Listen to radio	27%	10%	14%	7%	19%
Watch live TV	5%	3%	<1%	1%	3%

**Excludes Basrah, Qadisiyah, Babylon, Masyan and Wasit provinces*

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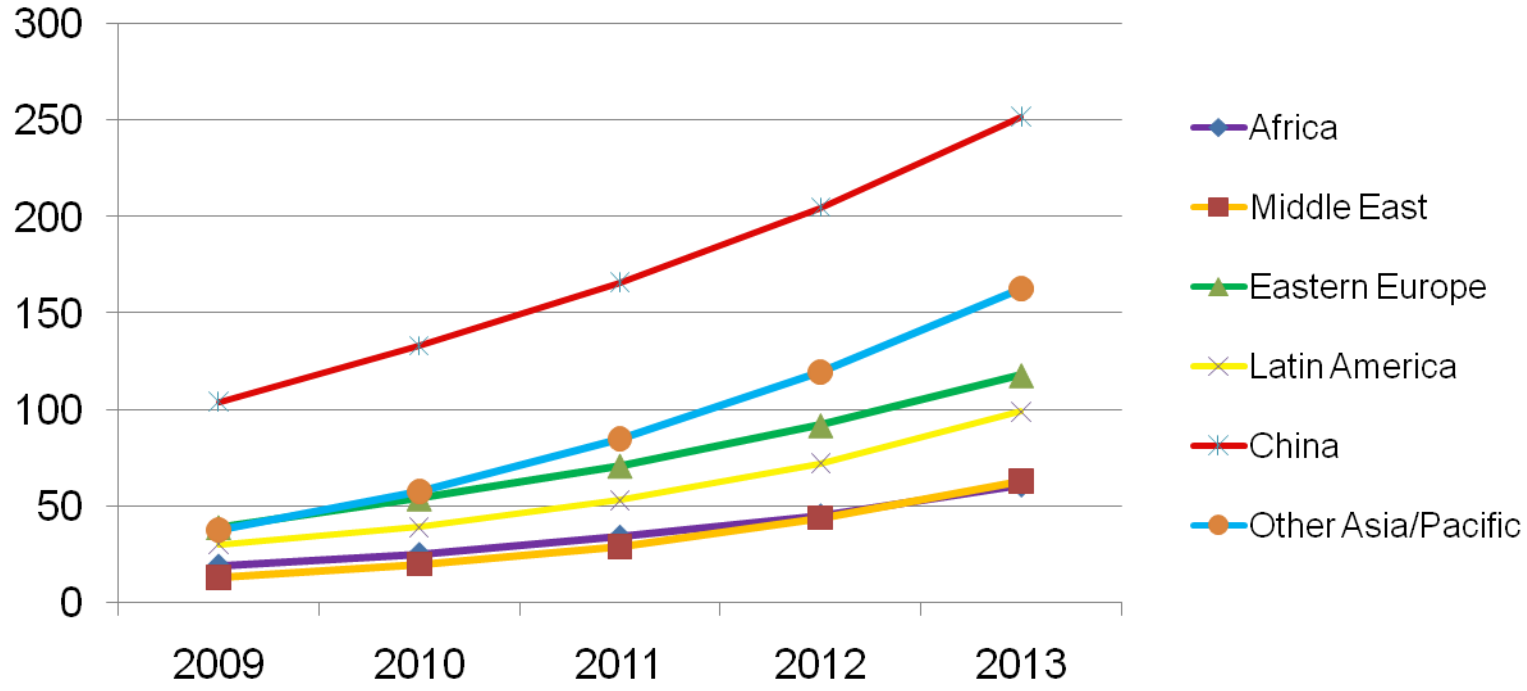
Projected Mobile Internet Users 2009 - 2013



Source: Informa Telecoms and Media

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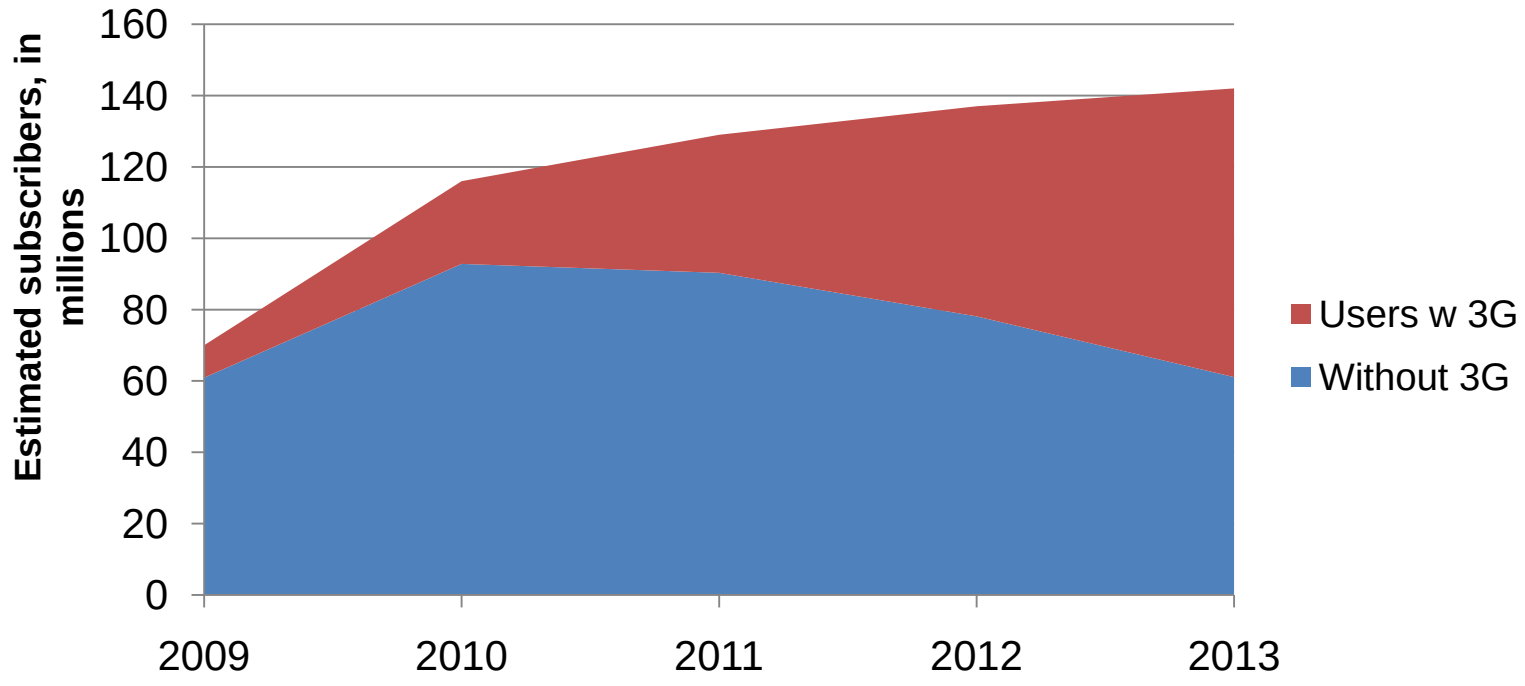
Indonesia: Projected Growth of 3G Mobile Technology



Source: Informa Telecoms and Media

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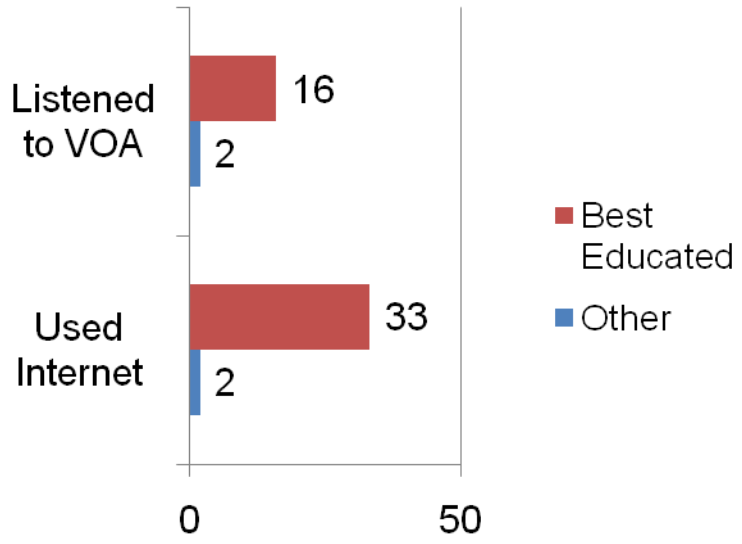
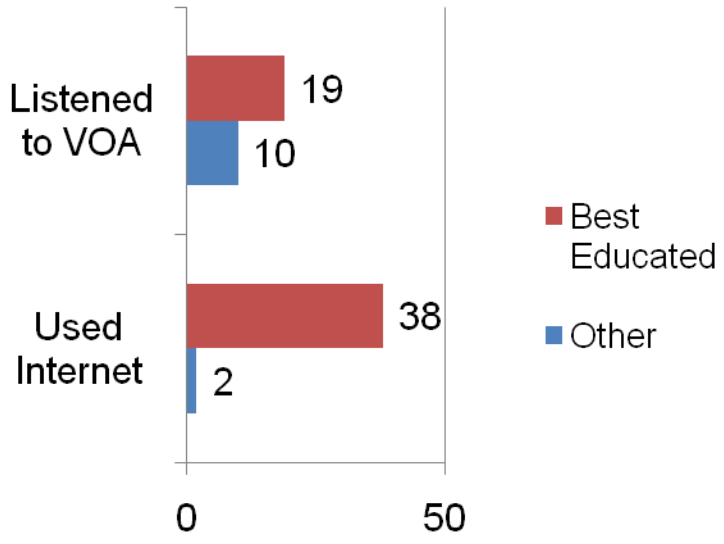
Internet Use Among the Better Educated

Ghana



Kenya



Percentage of each population groups using Internet and listening to VOA in previous week. Source: InterMedia surveys

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Implications for the BBG

BBG New Media

- Offer up-to-the-minute, comprehensive coverage for a 24/7 information environment.
- Adapt content/delivery to reception – and especially with mobile, consider bandwidth, cost, display constraints.
- Exploit interactive potential of new media - highly valued by audiences.
- Recognize the importance of lateral information flows.
- Communicate BBG's unique value in an increasingly fragmented media universe.
- Develop new options for niche audiences.

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BBG New Media

… and a word from Nigeria…

- "The Internet has really opened us… everybody wants to know what's happening on the Internet but 10 years ago there was nothing like news for youth like us, we were not interested … when the Internet came around, it changed everything.
  (Young female focus groups participant, Nigeria)

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BBG New Media

Developing New Media Initiatives

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BBG New Media

SAAS Solutions
(Software As A Service)

Benefits of “the cloud”

- Extend IT capabilities without investing in new infrastructure
- Close the gap between content creators and technologists
- Opportunities to diversify skill sets of workforce

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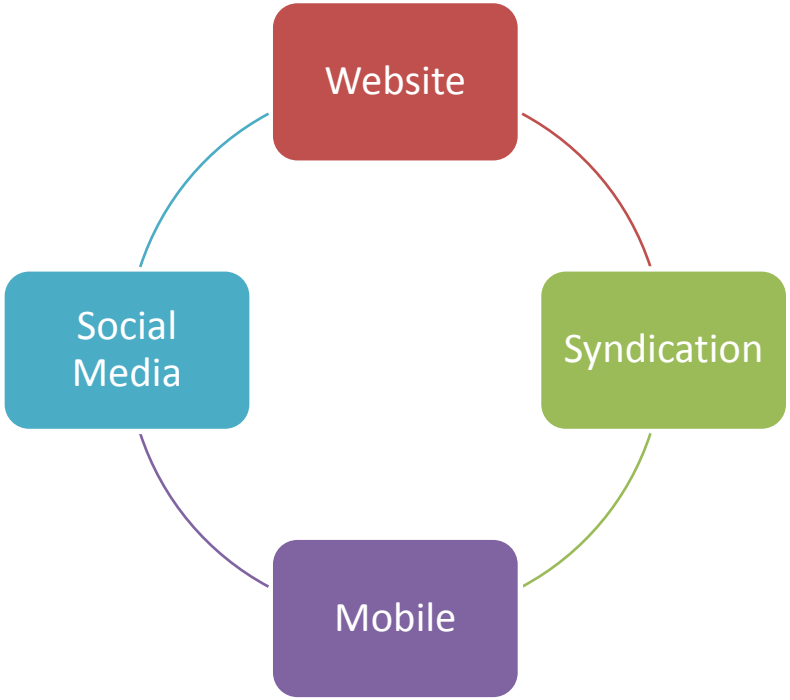
New Media Distribution Options



BBG New Media

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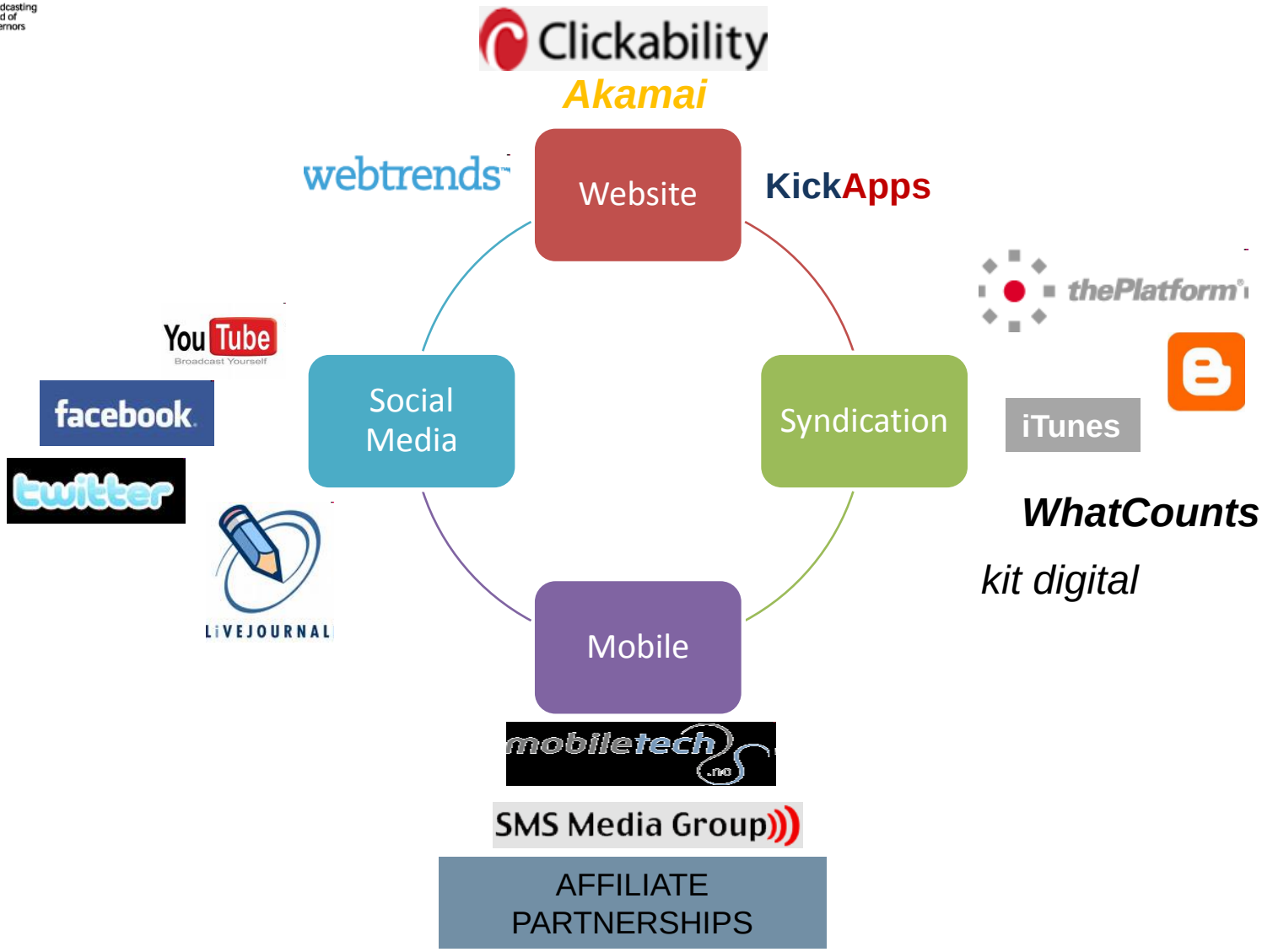

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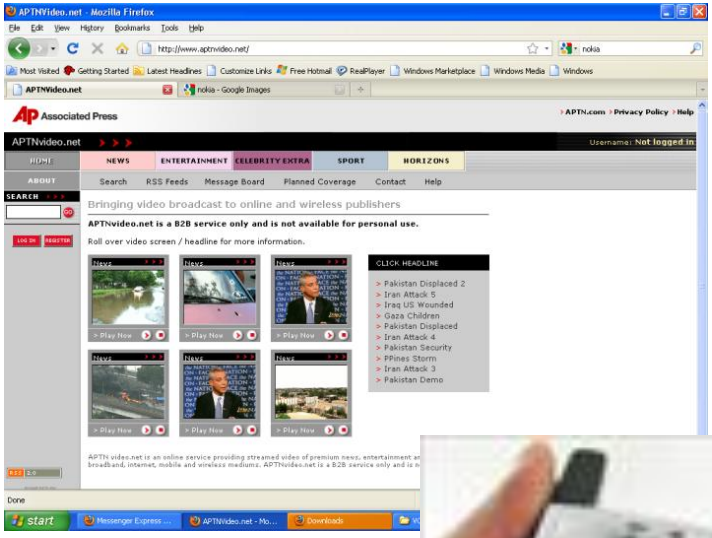
BBG New Media

FY 2010

Product Development

- Multi-Media Mobile; device and platform recognition
- Clickability Sites
  - Migration of remaining VOA services
  - Integration of OCB
- VOA Storefront for Affiliates
- Mobile Applications/APIs



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BBG New Media

goEnglish.me

A Hosted Solution

Alelo, Inc.

- Voice Recognition Software
- Interactive Games
- Avatars
- Cultural Immersion

Lightcrest

- Hosting

Druple

- Social Networking

MindGrubb

- Administration

goEnglish.me

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BBG New Media

Overcoming Internet Interference

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BBG New Media

REPORTERS WITHOUT BORDERS FOR PRESS FREEDOM

12 “Enemies of the Internet”

Burma	Saudi Arabia
China	Syria
Cuba	Tunisia
Egypt	Turkmenistan
Iran	Uzbekistan
North Korea	Vietnam

BBG broadcasts target all these countries most of which mount strong, systematic Internet interference.

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BBG New Media

BBG's Internet Anti-Censorship Program

- Client software such as Freegate, customized for BBG, ensures users land on our pages. Very popular in China and Iran in directing users to BBG sites.

- Web proxies, updated daily/weekly as we determine if current URLs are blocked. Updates pushed out via emails.
- A lightweight Virtual Private Network (VPN) system under development for Central Asia countries.
- Psiphon from the Open Net Initiative, a combination of web proxy and social distribution, customized for BBG and heavily used in Iran.

- Tor (The Onion Router) to use a 10,000 node peer-to peer-system to distribute content.

- Feeds over Email (FOE), the latest product development from the Anti-censorship Team, uses secure Gmail to embed RSS newsfeeds for display on local browsers – currently in development.

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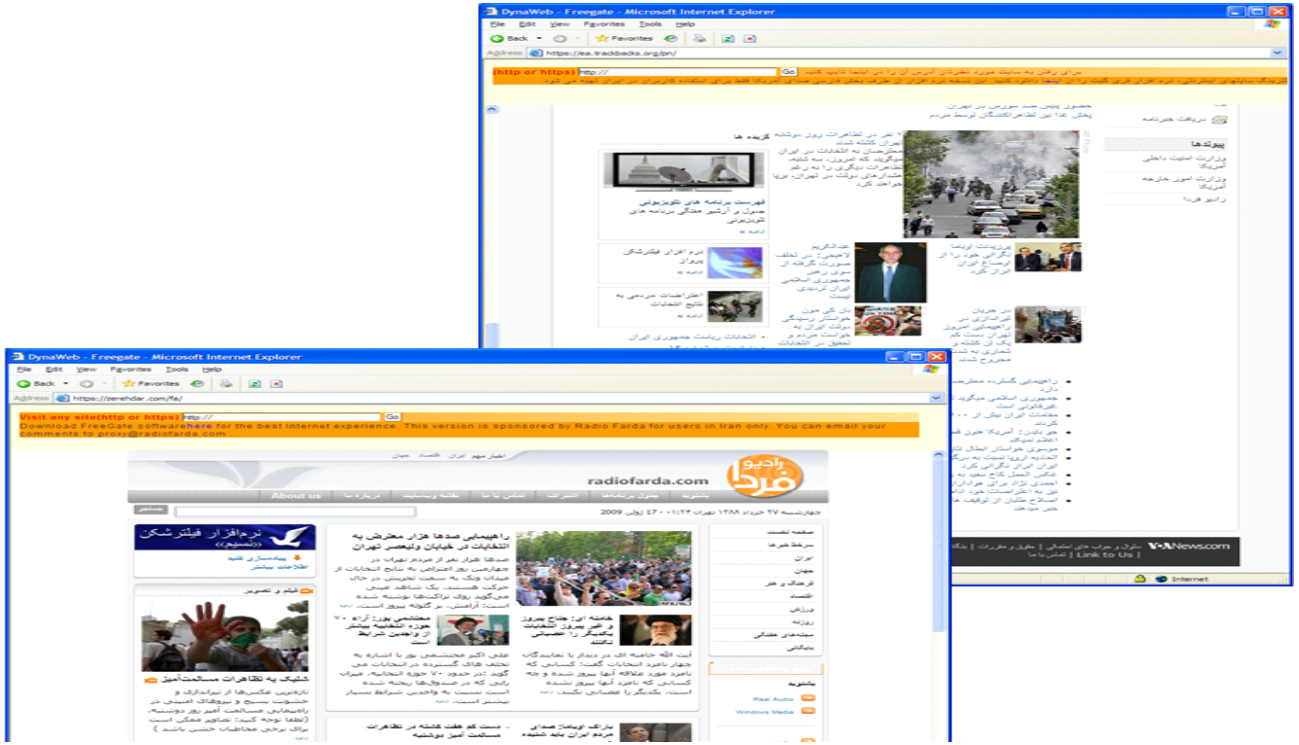
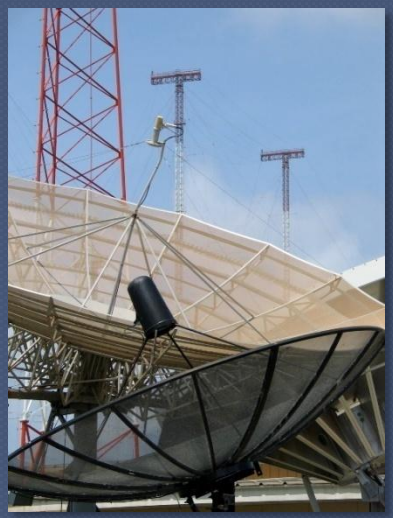
Proxy Pages for VOA's Persian News Network and RFE/RL's Radio Farda



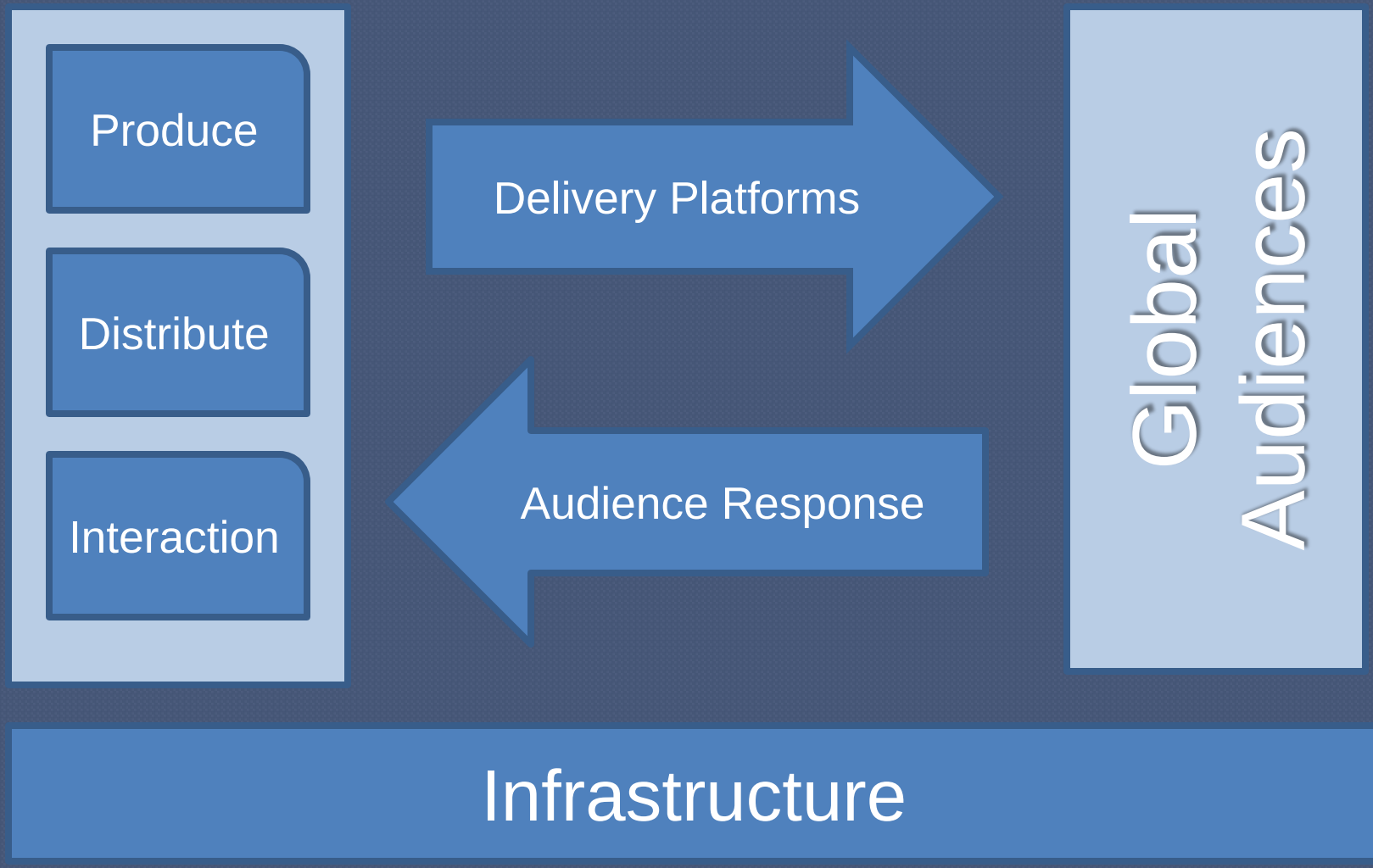
BBG Technology Update - 2009



IBB Engineering

Transitioning to a Digital World

Transitioning to a Digital World

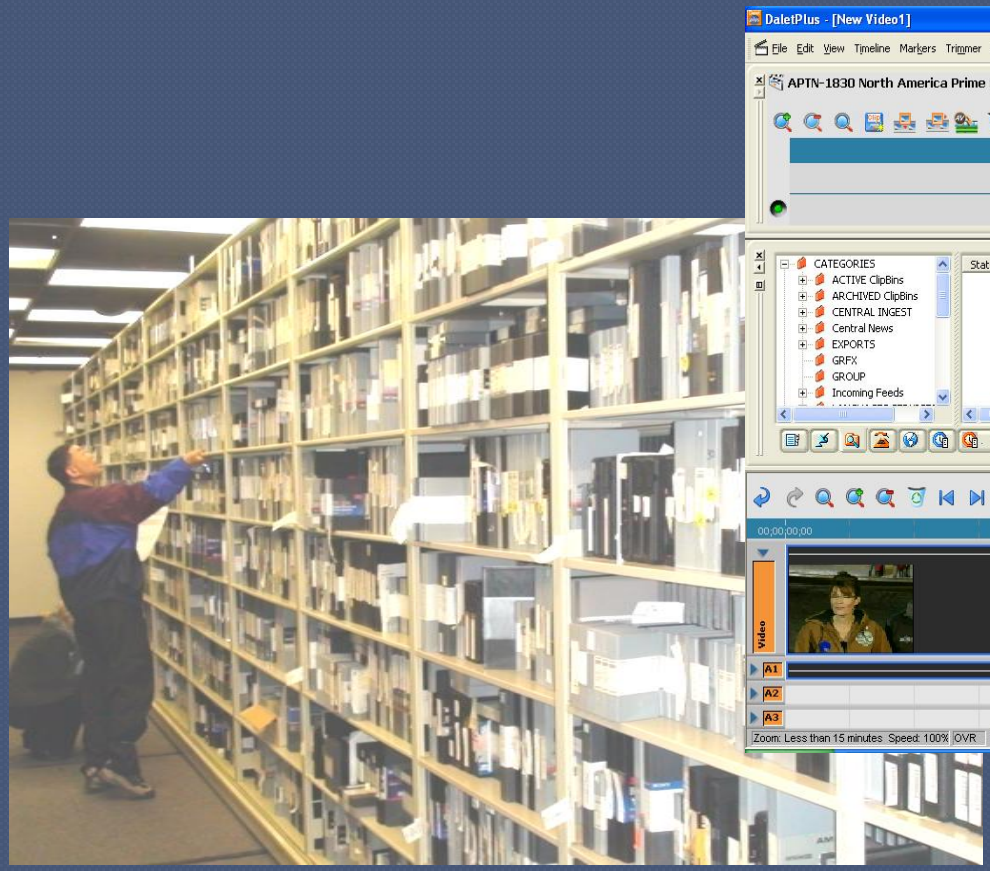


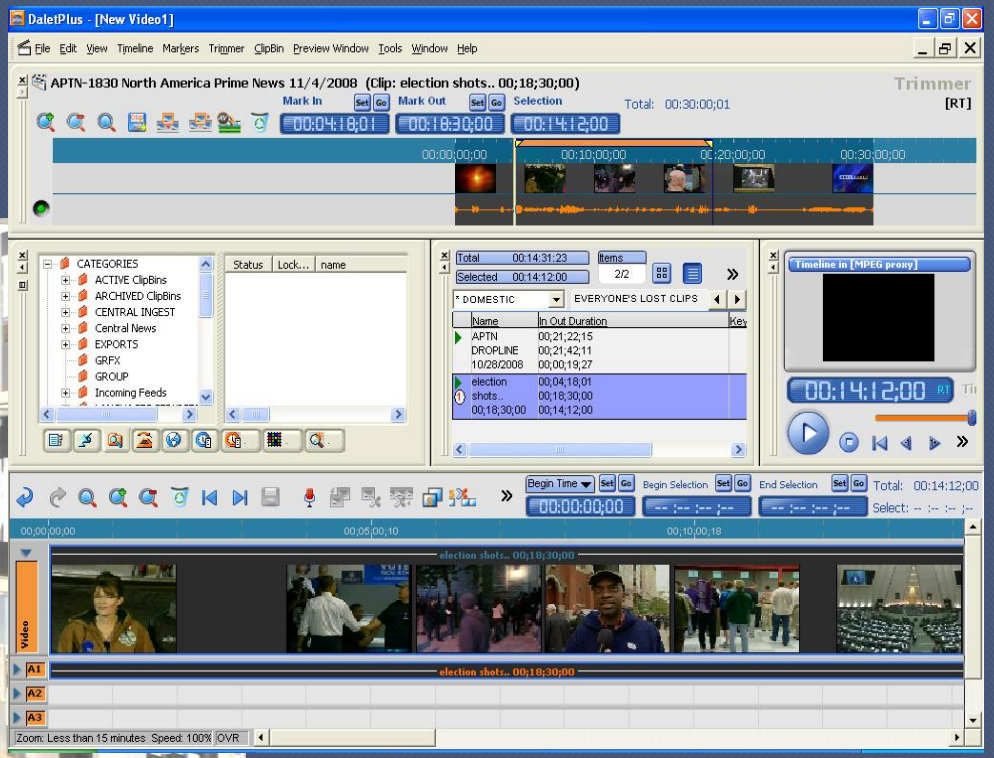
Transitioning to a Digital World

2009 Progress Report

- File-based production
- Remote news gathering
- High definition, Internet television
- Overcoming “Jamming”
- IT Infrastructure

File-based Production

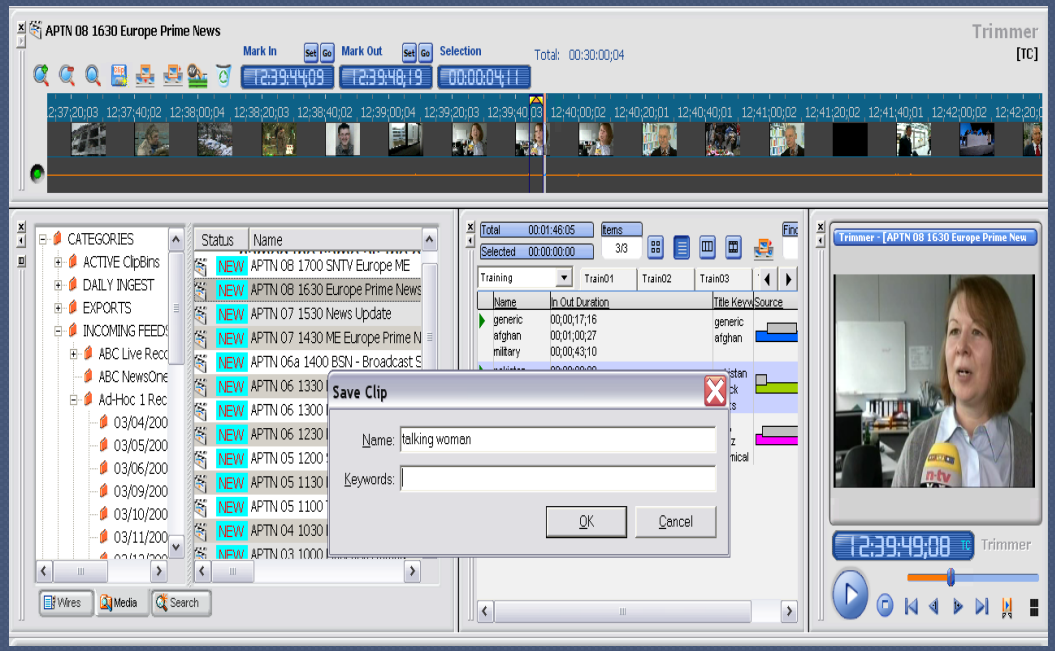




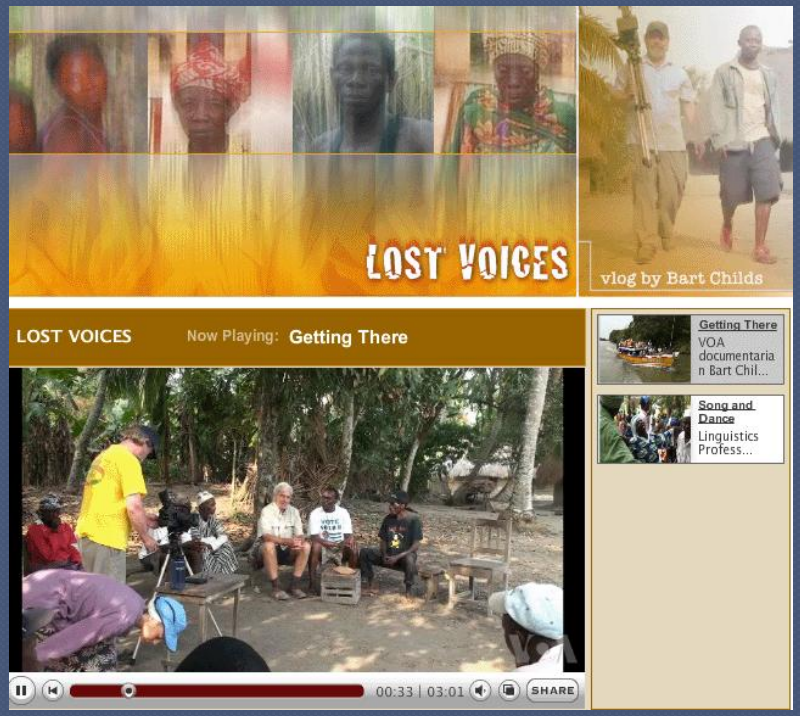
Going tapeless

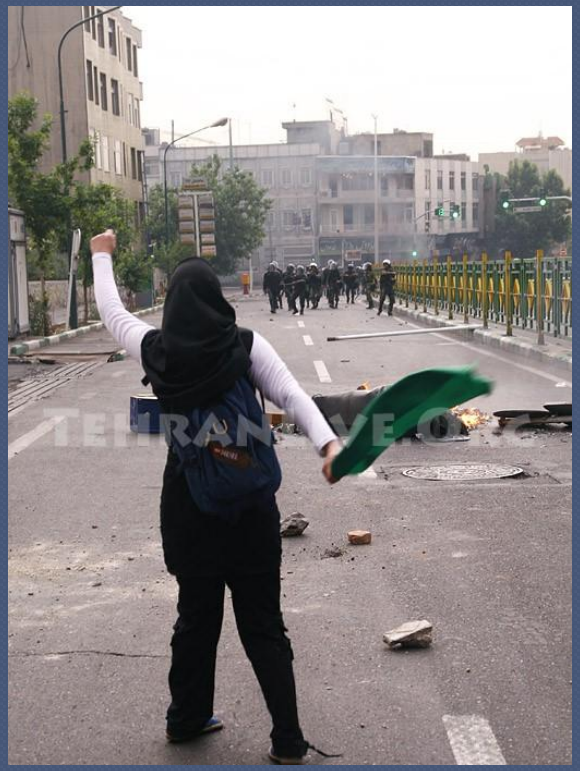
File-based Production

- Ingest
- Edit
- On-Air Playout
- Archive



Remote News Gathering



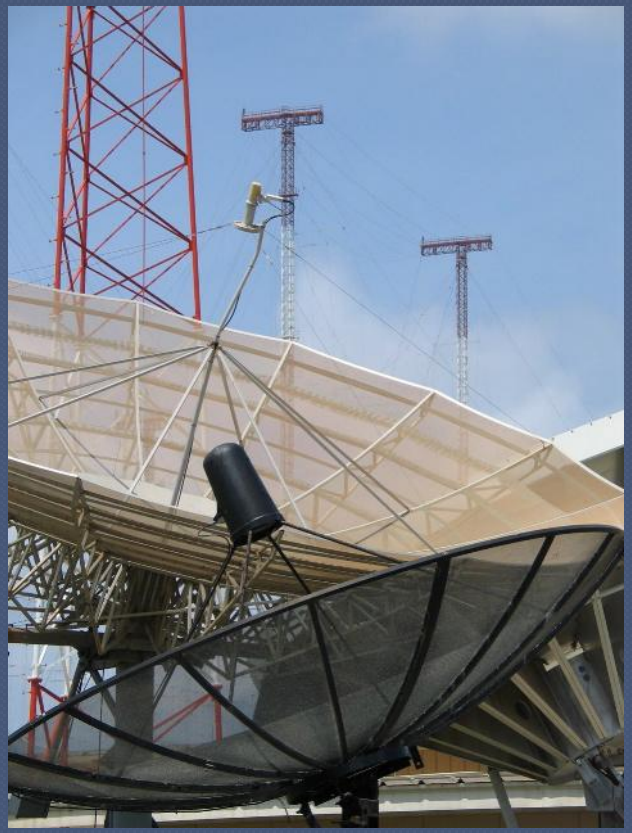


Remote News Gathering

MBN's Remote Studios

- Connecting Beirut, Cairo, Dubai, and Jerusalem with Alhurra's headquarters in Springfield,Va.

High Definition and Video Over the Web



High Definition and Video Over the Web

BBG's Content Distribution Network

High Definition and Video Over the Web

President Obama's Inauguration

Overcoming “Jamming”

- During their June 2009 elections Iran intensified jamming of BBG satellite transmissions.

Overcoming “Jamming”

- BBG employed several strategies to combat the jamming.

Overcoming “Jamming”

- BBG enhanced bandwidth and server capacity to meet user demand.

Overcoming “Jamming”

Radio Jamming

VOA	RFA	راديو فردا radiofarda.com	RADIO MARTI TV
Mandarin Tibetan Uzbek Korean Persian Zimbabwe Program (English, Shona, and Ndebele)	Mandarin Tibetan Uyghur Vietnamese Korean	Persian	Spanish

Overcoming “Jamming”

- Anti-Jamming
- Email
- Proxy Websites

Overcoming “Jamming”

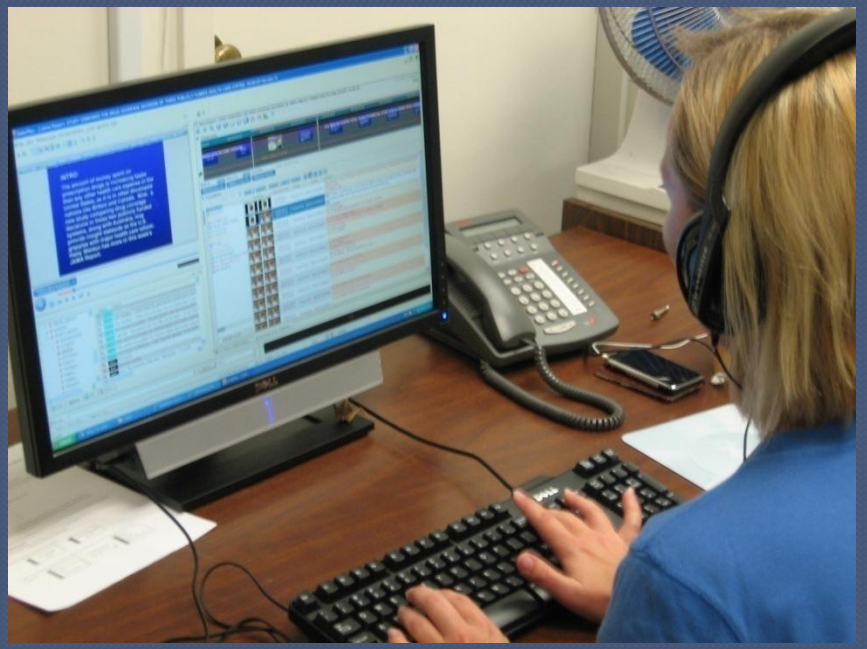
- Feed Over Email “FOE”

IT Infrastructure

- Network
- Servers

IT Infrastructure

- Desktops



BBG Technology Update 2009

IBB Office of New Media

Rebecca McMenamin, New Media Director

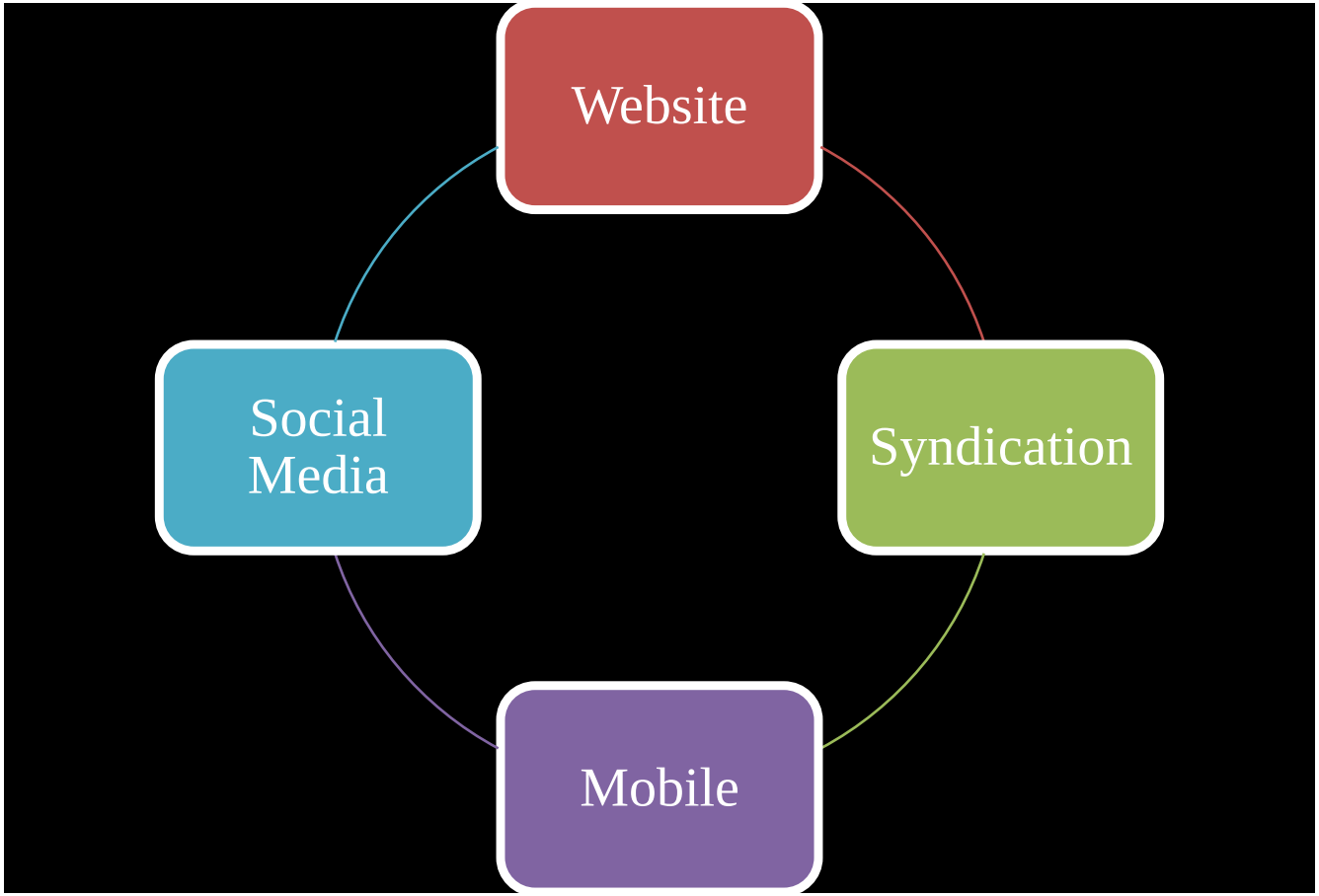
new media•new thinking

SAAS Solutions
(Software As A Service)

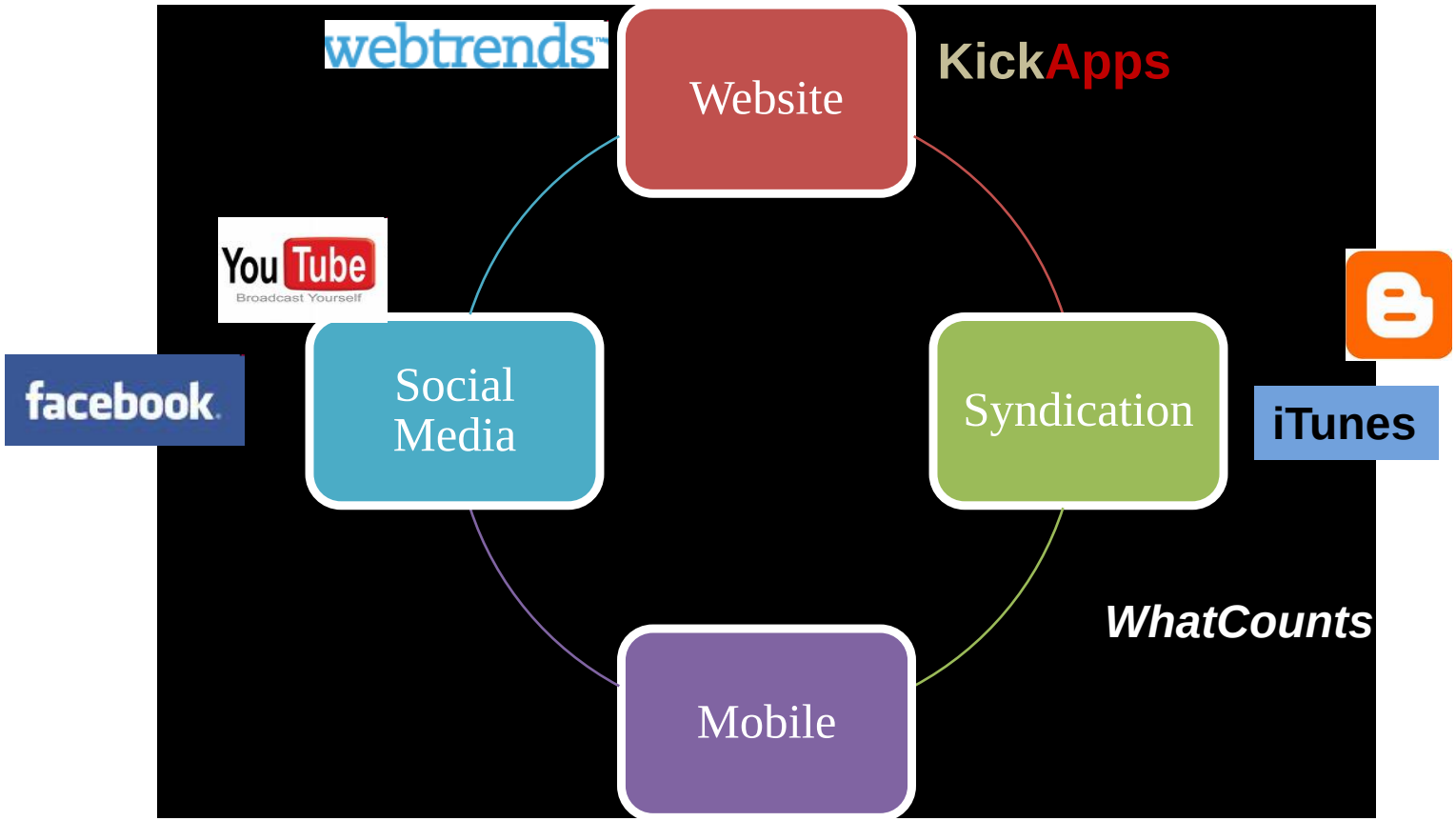
Benefits of “the cloud”

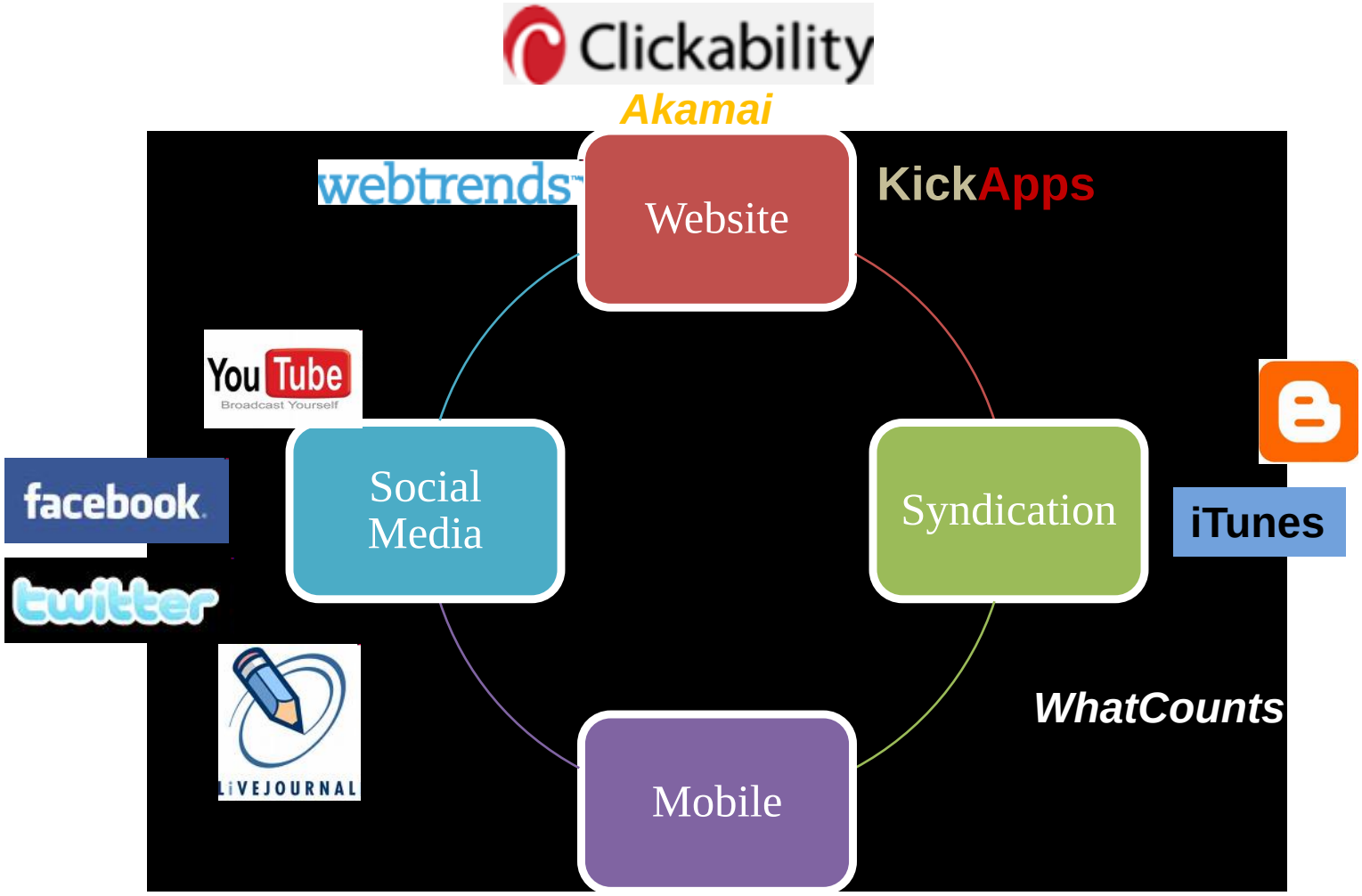
- Extend IT capabilities without investing in new infrastructure
- Close the gap between content creators and technologists
- Opportunities to diversify skill sets of workforce

New Media Distribution Options



new media•new thinking

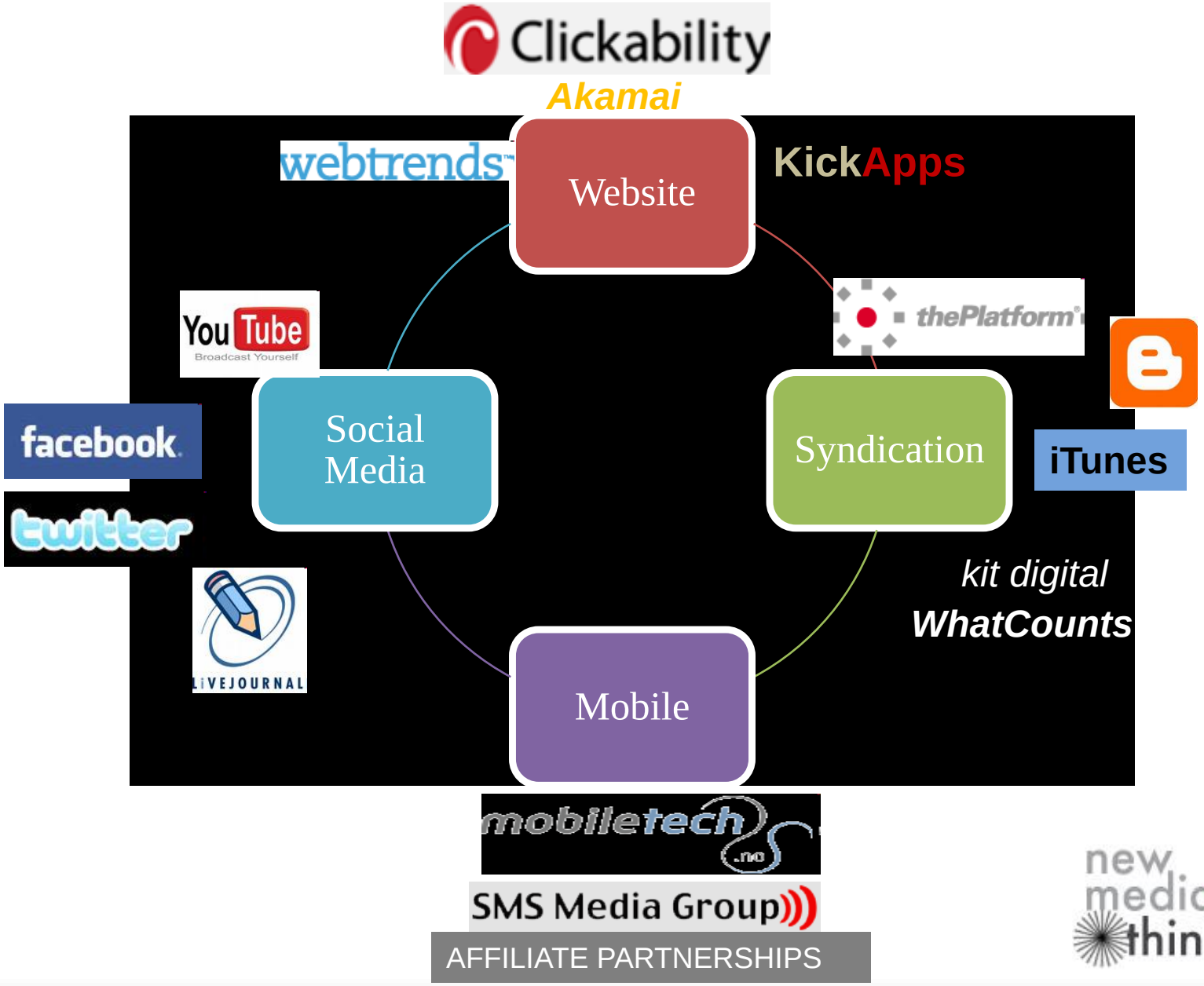

webtrends
Website
KickApps
YouTube
Broadcast Yourself
facebook
Social Media
Syndication
iTunes
WhatCounts
Mobile



SMS Media Group

AFFILIATE PARTNERSHIPS

new media•new thinking


Clickability
Akamai
webtrends
Website
KickApps
thePlatform
YouTube
Broadcast Yourself
Social Media
Syndication
facebook
iTunes
twitter
LIVEJOURNAL
kit digital
WhatCounts
Mobile
mobiletech
.no
SMS Media Group
AFFILIATE PARTNERSHIPS

What's New?

- Navigation
- Larger Photos
- Wider Page
- Comments
- Social Bookmarks
- Most Popular

http://www1.voanews.com/chinese/news/

goEnglish.me

A Hosted Solution

Alelo, Inc.
- Voice Recognition Software
- Interactive Games
- Avatars
- Cultural Immersion

Lightcrest
- Hosting

Druple
- Social Networking

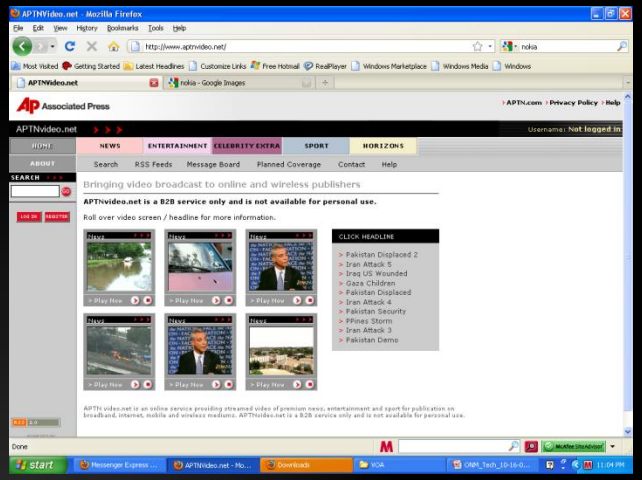
MindGrubb
- Administration

http://goenglish.me

FY 2010

Product Development

- Multi-Media Mobile; device and platform recognition
- Clickability Sites
  - Migration of remaining VOA services
  - Integration of OCB
- VOA Storefront for Affiliates
- Mobile Applications/APIs



FY 2010

Development Support

- Photo / Graphic Digital Asset Management
- Creative Services
  - Design Support for Clickability Migration
  - Standard Templates for Charts, Maps
  - Advanced Mapping Software
  - Graphic Illustrators, Photojournalists
  - Multi-media Designers
- Search Engine Optimization/Analytics
- Distribution Management Platform
  - Feed Generator
  - XML Tag Generator
  - Customized Flash Media Player
  - Affiliate and Social Network Distribution

new media•new thinking

BBG Technology Update - 2009

Radio Free Europe/
Radio Liberty

RADIO FREE EUROPE/RADIO LIBERTY
FY 2009 TECHNOLOGY REVIEW

RFE/RL
10.15.09

Executive Summary

- State-of-the-art media facility
- Pangea Internet publishing platform
- Reaching audiences
- Video efforts

State-of-the-Art Media Facility

TOC

Technical

Operations

Center

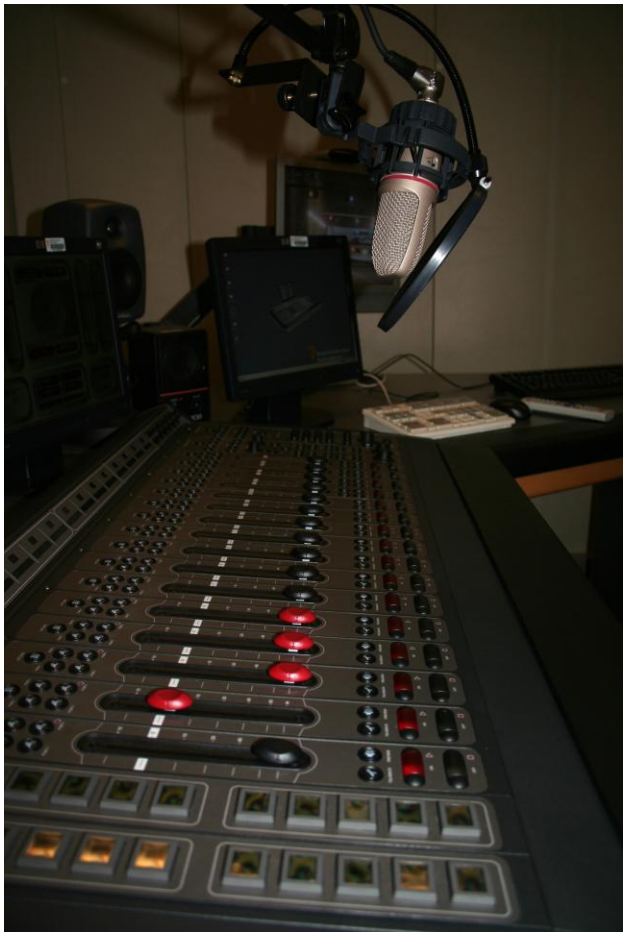
New Technical Infrastructure

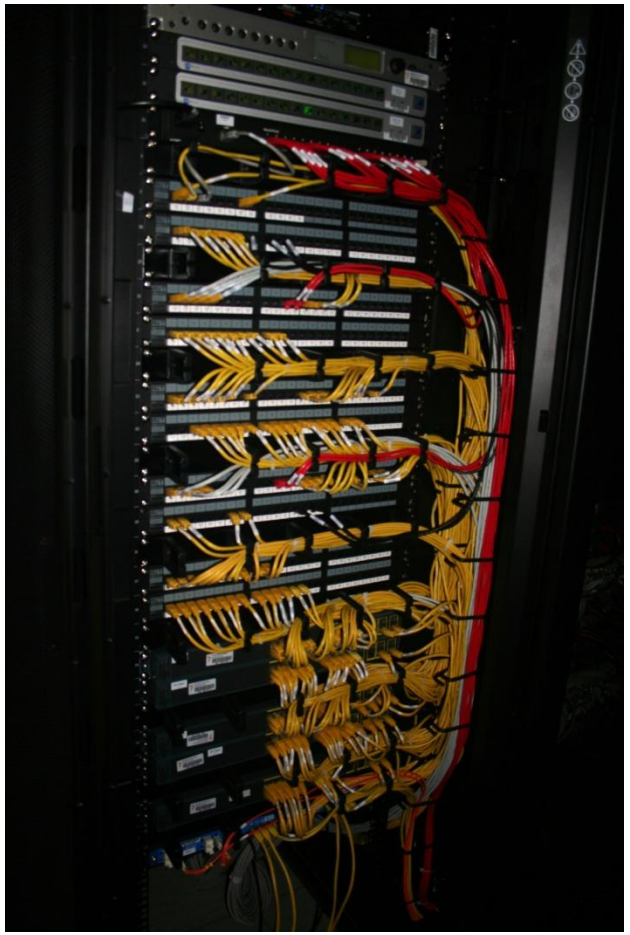
All IP

All audio routed through the network

Robust network and telecoms

Scalable





Pangea – A Better Internet Platform

All services moved to Pangea publishing platform

Persian (Radio Farda) Website

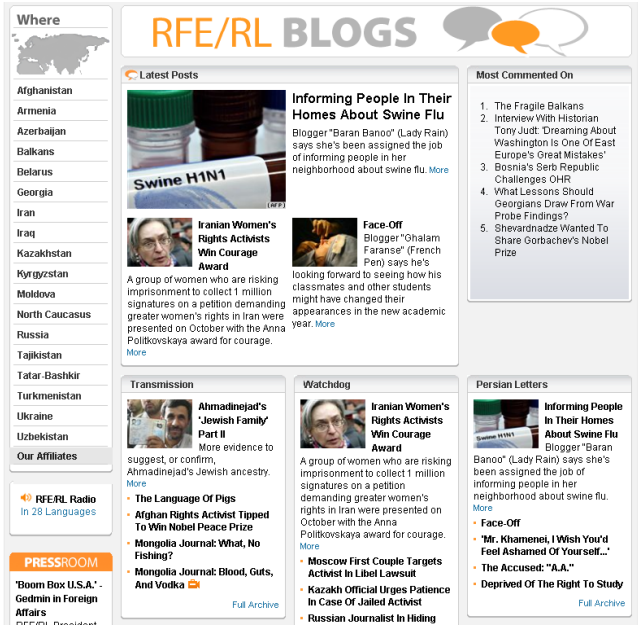
Pangea Offers…

- **Interactivity**
  Audience comments, blogs

- **Mobile**
  Radio through mobile phones, podcasts

- **Visuals**
  Sound slides, photo galleries, video

Interactivity – Blogs, Comments



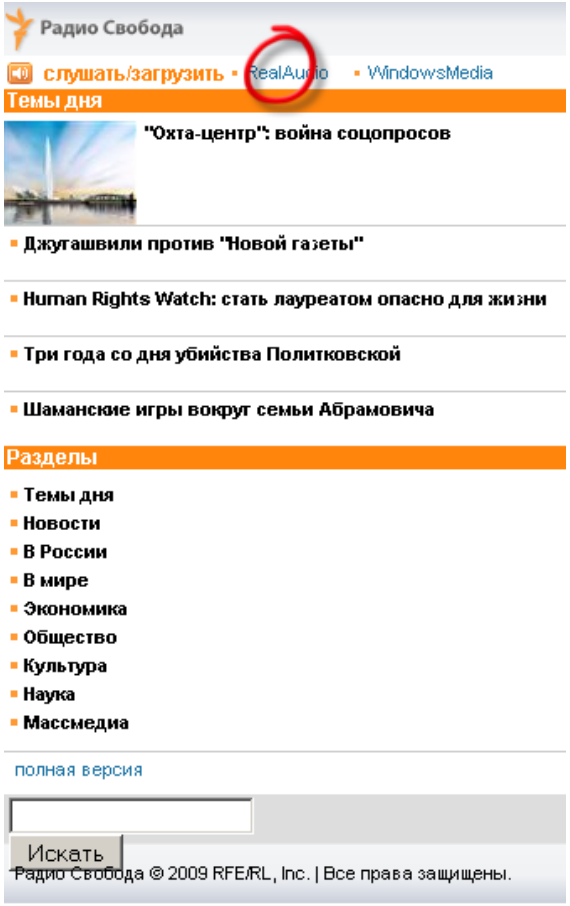
Customized Flash Player
(LIVE and On-Demand)

Audio

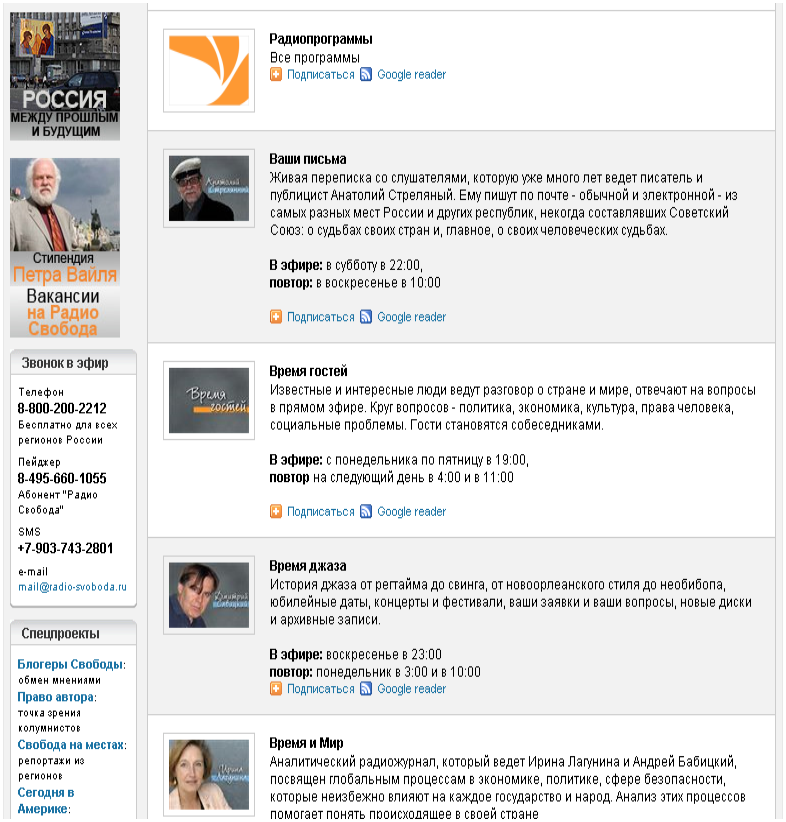
Video

Mobile & Podcast

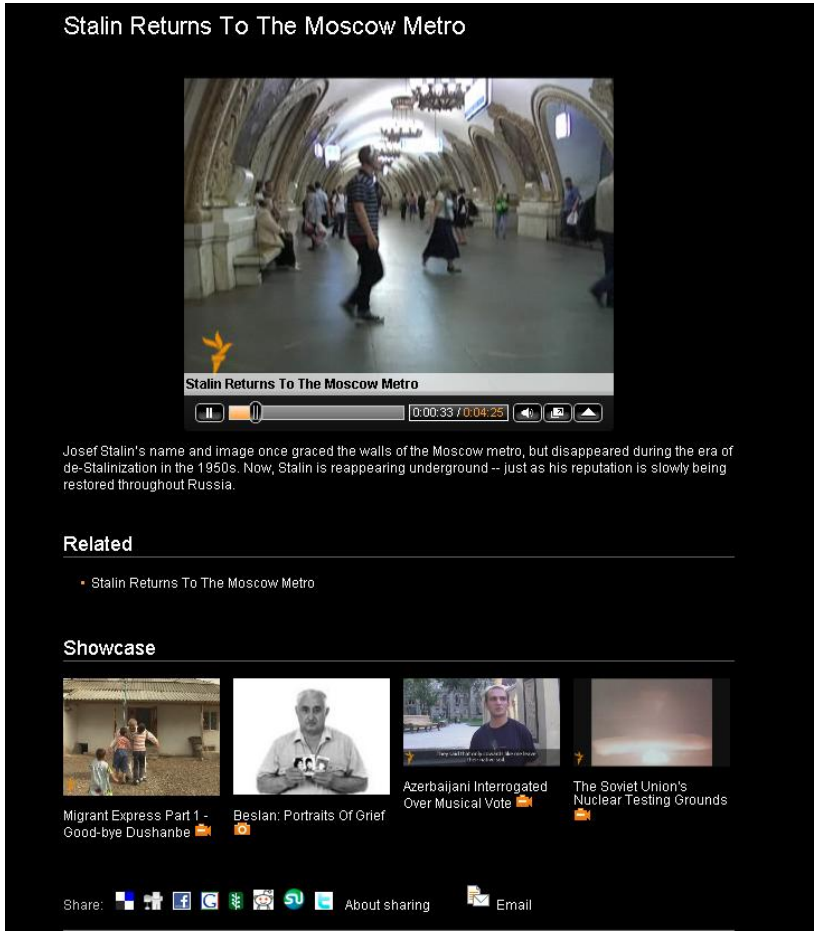
Mobile



Podcast



Sound Slides, Photo Gallery and Video

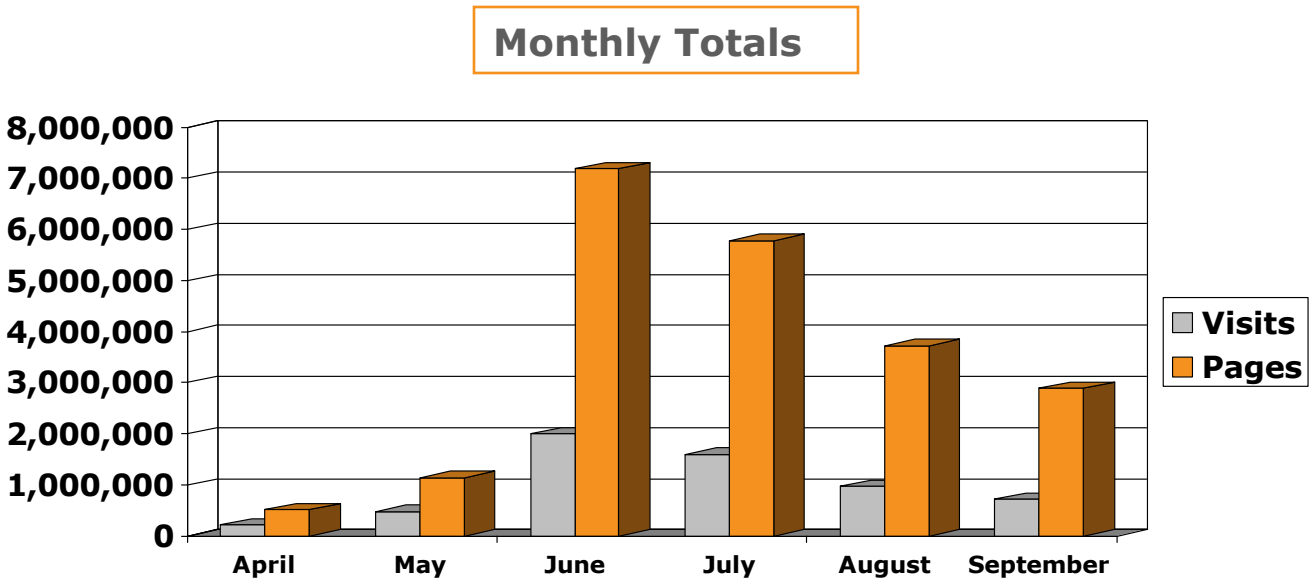


Reaching Audiences

- Proxy technologies break Iranian Internet filtering
- Dual language Afghan Website and Kabul bureau
- Strategic shift to Internet expands reach in Kazakhstan
- Blogging on Georgian Website attracts thousands
- Bloggers' forum in Belarus

Radio Farda's Web Traffic from Iran

Huge impact during crisis



Note: June numbers are a conservative estimate, due to statistical server crash under heavy traffic. Numbers for part of the month were lost. These numbers are based on daily averages of remaining stats.

Radio Farda's New Facebook Page…

Now has more than 18,000 fans

Interactivity Allows Kabul Bureau to Expand Reach

More than 5,000 phone calls and emails monthly

Strategic Shift to Internet Pays off in Kazakhstan

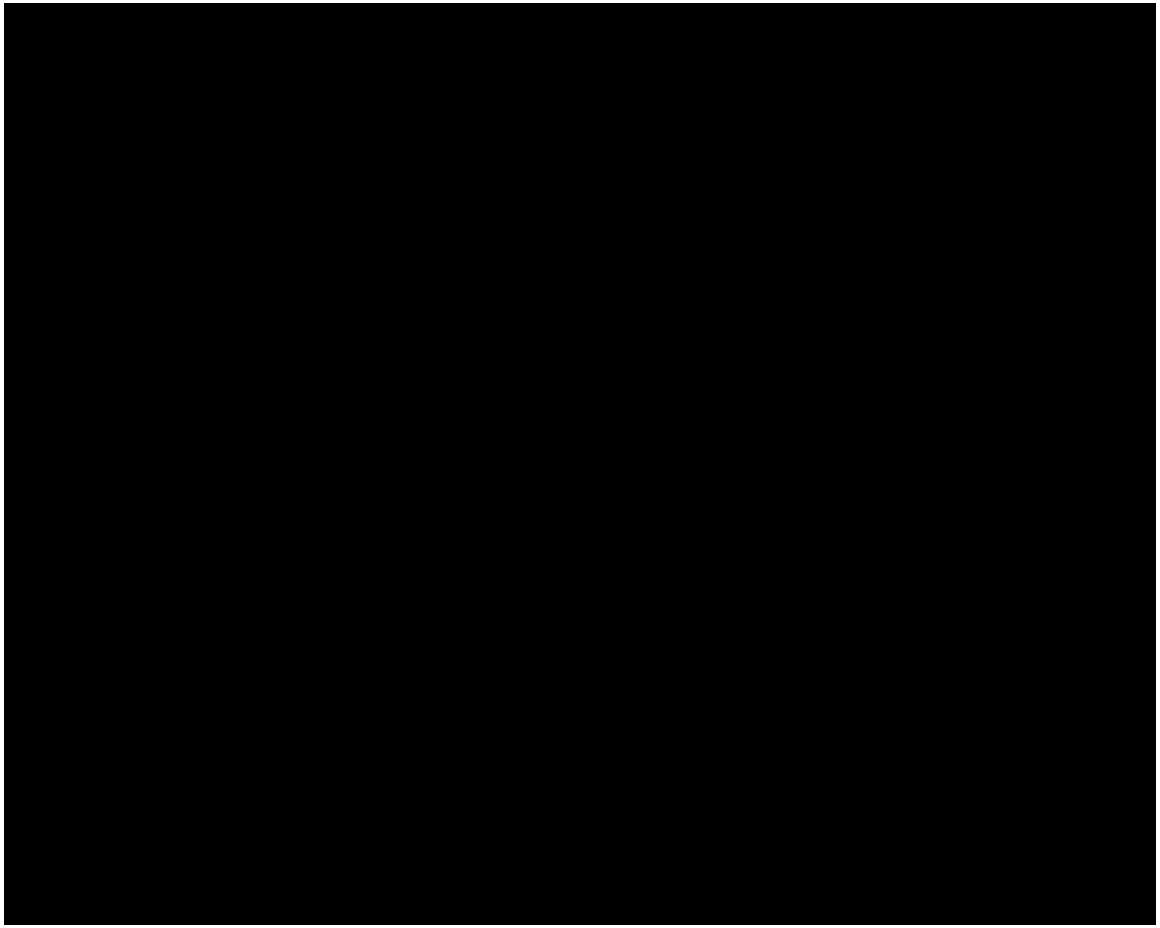
New Kazakh website wins prestigious Online News Association award

Visual Media for Internet & TV

Training underway for VJs based in Prague and at the bureaus

Pipeline of Video from the Regions

“Migrant Express” (Part 4 of 7) Moscow VJ Production



Video/TV Set

Multi-purpose

State-of-the-Art

Studio

Video in the Palm of Your Hand

Bureau

ventures

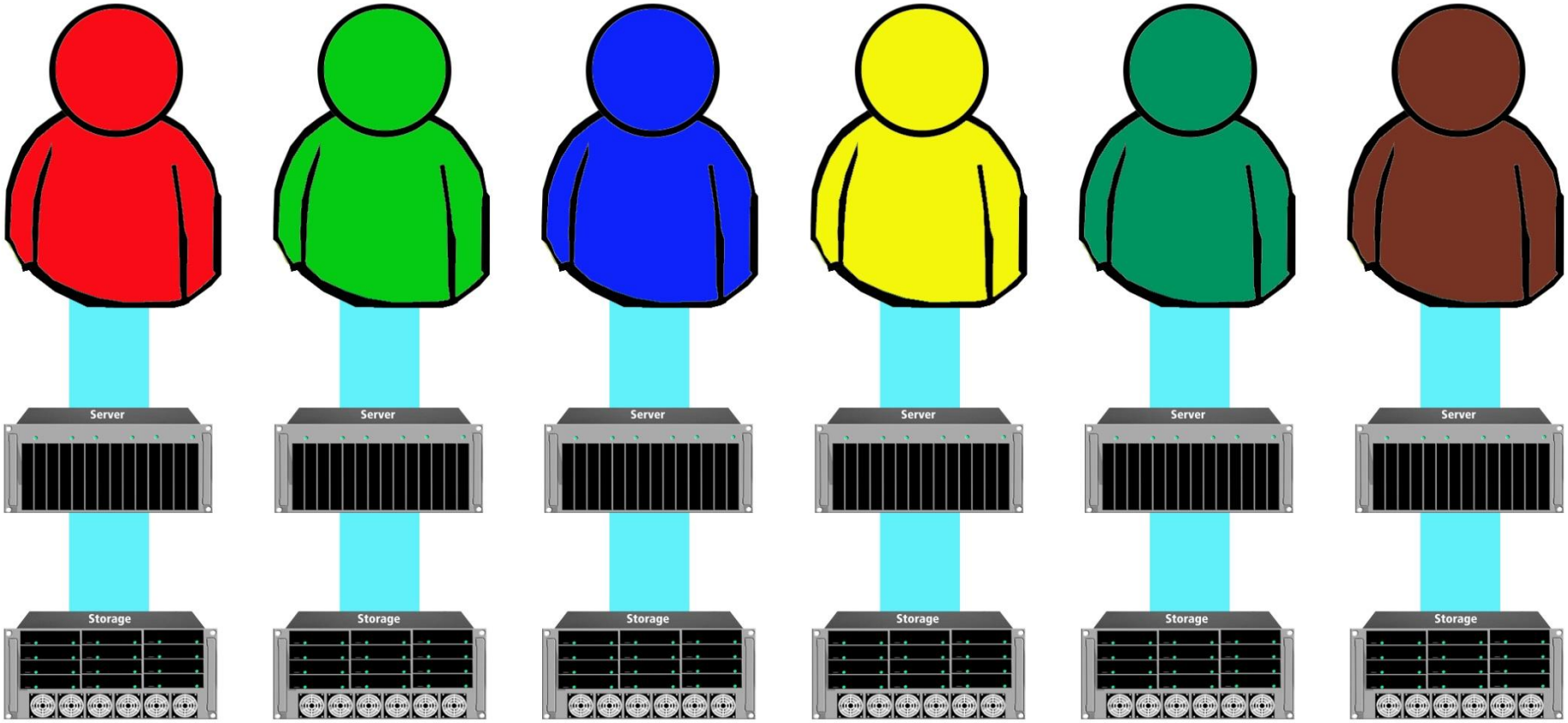
Looking Ahead

- User generated content
- Social network style sub-branded sites
- Video content management system
- Mobile media technologies
- Satellite TV distribution??

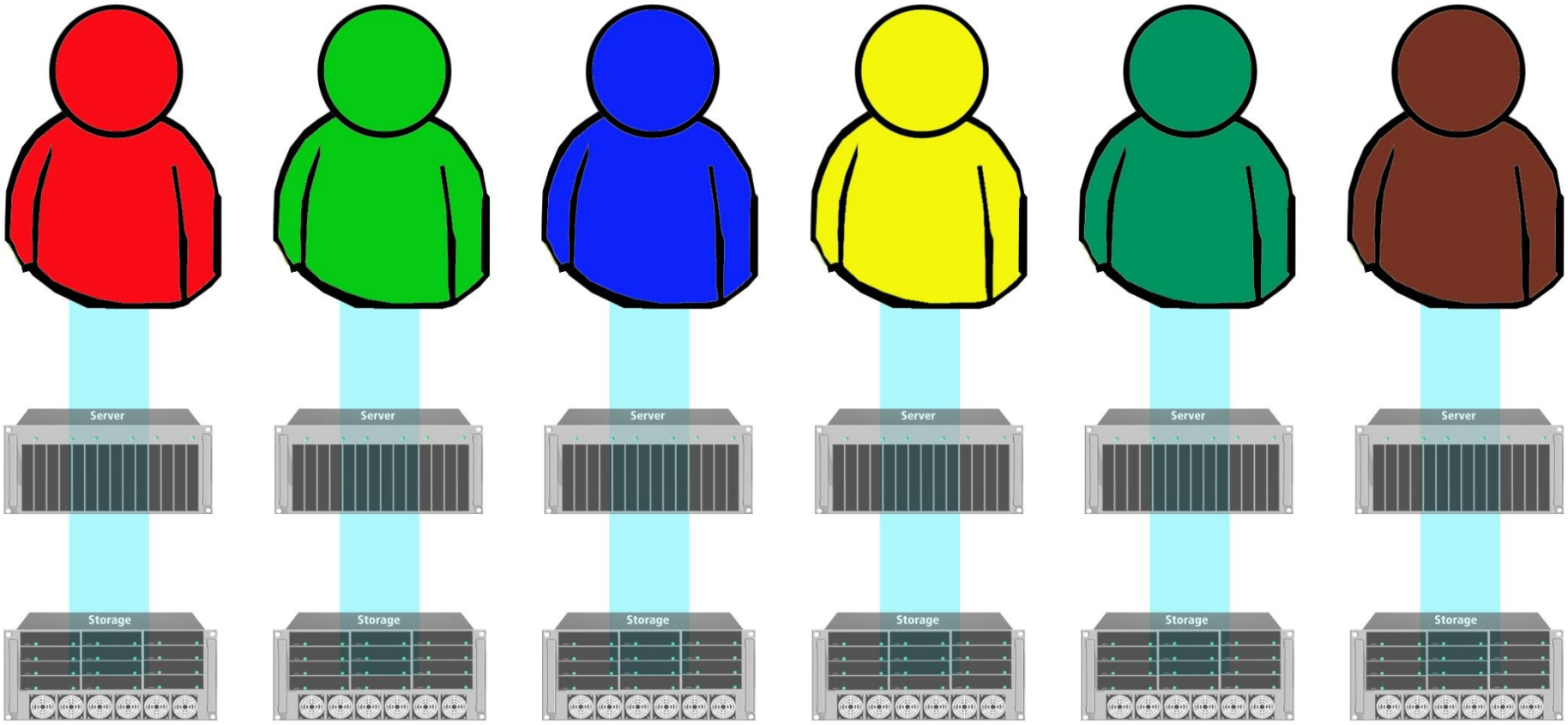
BBG Technology Update - 2009

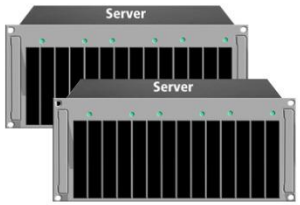
Radio Free Asia

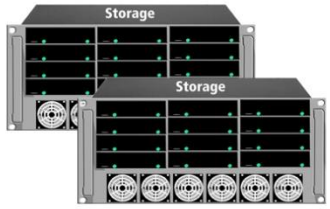
Yesterday's Physical Environment



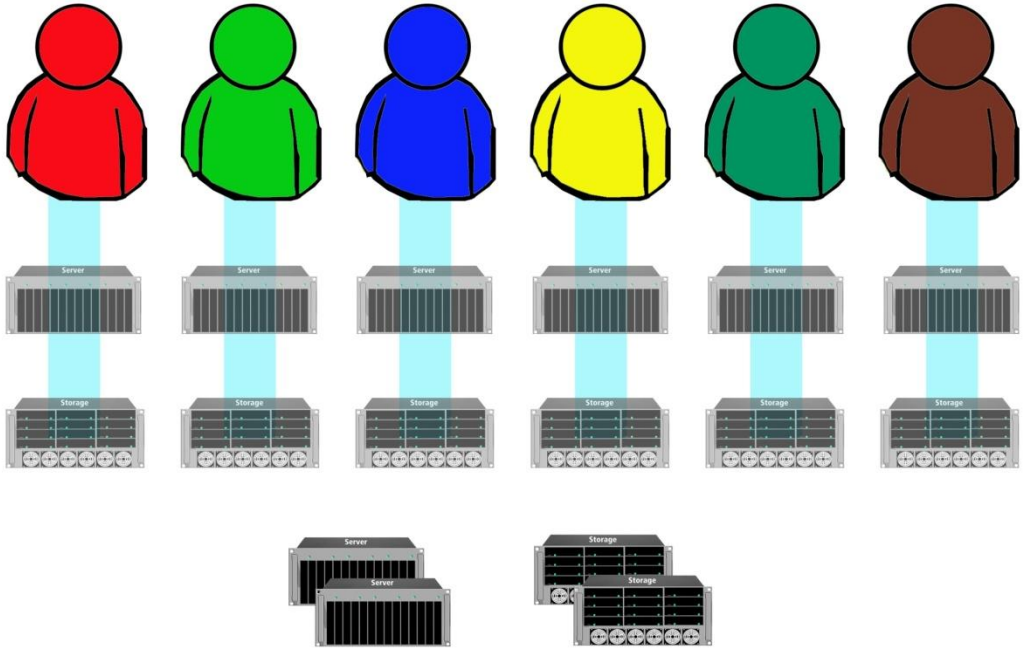
Today's Physical Environment







External & Internal Environment



Radio Free Asia

A few examples of RFA presence on social media

"*As digital media change the way people engage with civic issues and causes, traditional journalists take part and help the public conversation go well.*"

Michele McLellan - Knight Digital Media Center News
USC Annenberg

Two YouTube channels, tens of playlists; 17 blogs, eight languages; six facebook pages, 51,650 fans; eight twitter feeds; delicious, BBS etc

Purpose? Anticensorship and citizen dialogue – spreading the word

BBG Technology Update - 2009

Middle East Broadcasting Networks

Middle East Broadcasting Networks, Inc.

Alhurra Television
Radio Sawa

October, 2009

Contents

- AutoMam Project – Media Assest Management (Cinegy Replacement)
- Virtual Set (The Washington Bureau)
- Social Media Plan

الحرة

Media Asset Management/Automation System

(Cinegy Replacement)

The new Media Asset Management system soon to be installed at Al Hurra TV, replaces the existing obsolete system called Cinegy. Some of the key features of the new system include:

- Vastly improved reliability
- Simple World-wide contribution from field reporters
- Media content archival and search functions from any location
- Greatly improved workflows (faster to air)
- Publish to the Web and TV at the same time
- Allows for news and programming production anytime -anywhere

Improved Workflows and Capabilities

Broadcaster Groups And Networks Currently Using This System

Virtual Set Benefits:

- Enhance Alhurra's on-air look
- Al Arabiya, Al Jazeera, CNN, CBS, Fox, BBC, Sky, MSNBC, CNBC, are a few of the broadcasters using virtual sets
- We're able to incorporate real items such as plants, desks, etc.
- Increase the variety of programming out of one studio
- Flexible for news and current affairs shows

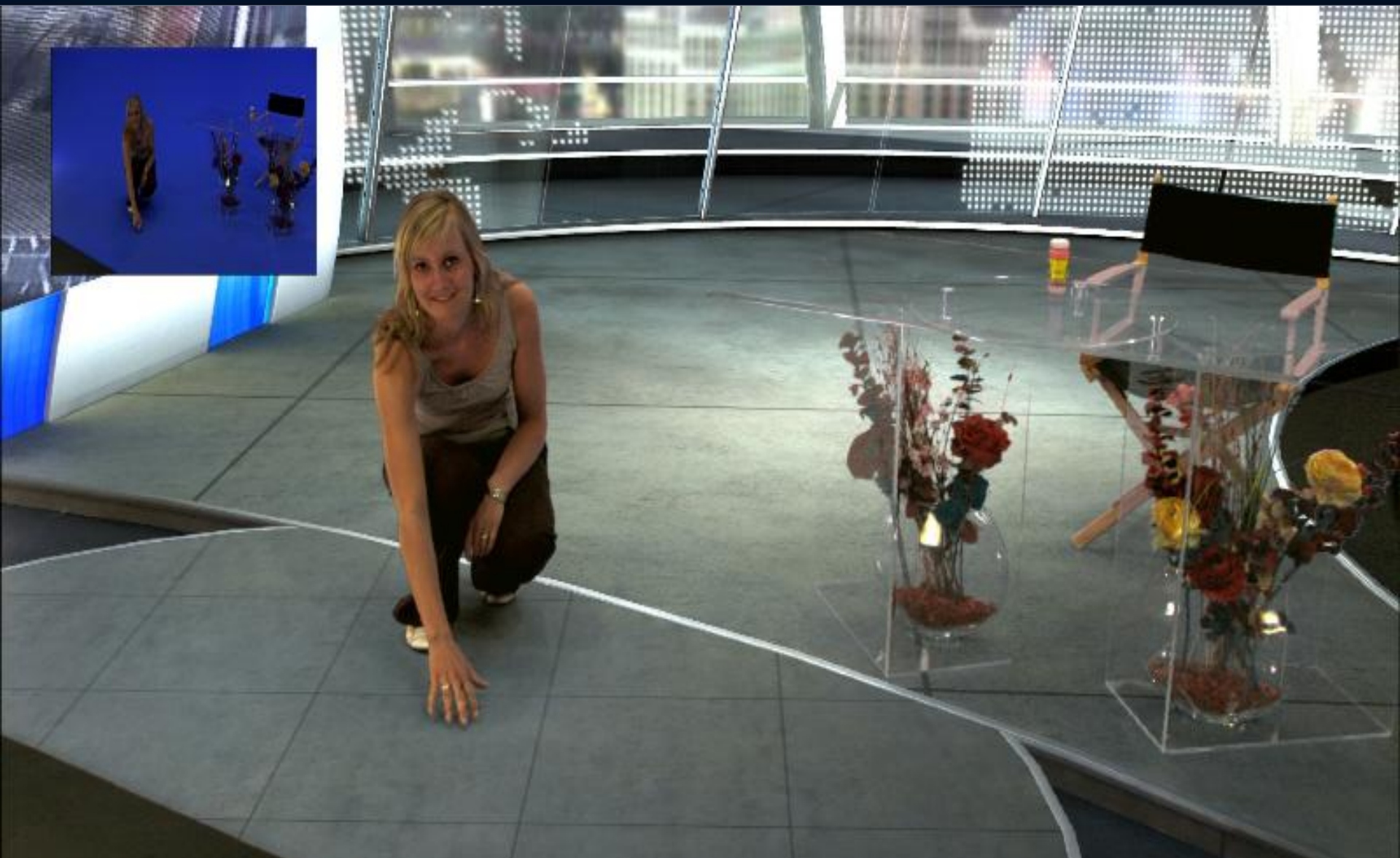
(Benefits continued)

- More cost effective than traditional ‘hard’ sets
- Reduces cost of traditional sets as well as pre-production
- Minimal storage space required
- Off load some shows to our DC location
- Easier access to guests in DC for Alhurra talk shows


الحرة


الحرة
FULL
MENTAL
JACKET


الحرة


الحرة

MBN and New Media

- MBN understands the need to reach its listeners and viewers in newer and more effective ways
- Harnessing the power of all these new media tools will be critical for our success in an increasingly digital world
- We will deploy a variety of tools in order to effectively reach people and make it easy for them to 'consume' MBN content

These tools include:

RSS Feeds

Podcasts

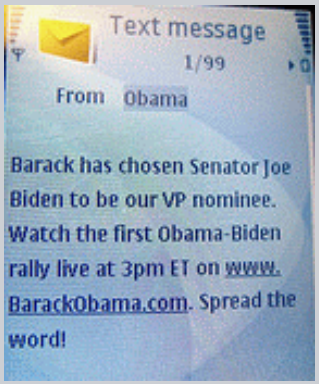
Mobile Web

Widgets, Gadgets and Apps

Sawa/Alhurra Websites

(the Hub)

Social Media



Text Alerts

Blogs

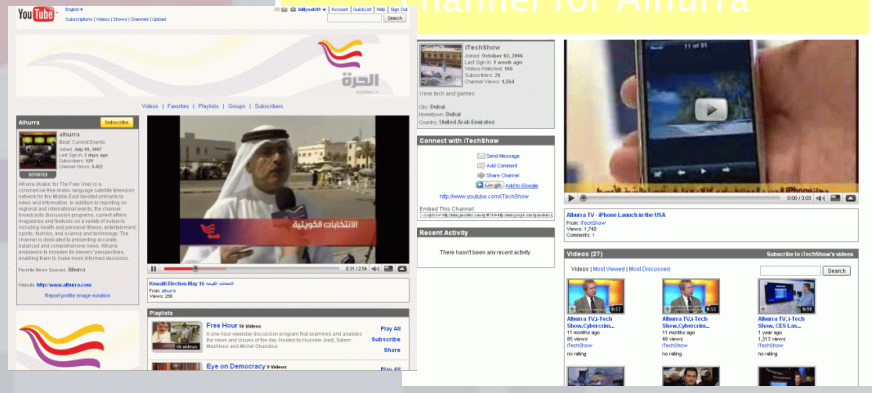
Audio and Video

MBN's Current Social Media Outreaches

Our new media strategy currently is focused on "the big Twitter and You Tube.

Microblogging is an essential tool. Many news organizations are utilizing Twitter and so are individuals from these news organizations

In addition to the archived videos we have on the Sawa and Alhurra websites, it is imperative that we utilize YouTube (and other video sharing sites) to virally spread our content. Therefore we have established a You Tube channel for Alhurra



Facebook is the dominant player in the social media world. It is the place where the masses congregate and share content. We have set up Facebook pages for **Alhurra**, **Radio Sawa** and **Al Youm**

- Our mandate is to reach communities of people in newer and more effective ways. Engaging them, serving them and interacting with them regardless of the specific platform it is on

- An effective new media strategy also reaches younger audiences who we don't reach with traditional methods

- We are currently redesigning the MBN website(s) in order to better incorporate new media tools and reflect a more refined strategy

- Our social media strategy includes the spread of MBN content by utilizing numerous new media tools and platforms

Looking Ahead

- The MBN web presence will be newly reorganized under a New Media umbrella. The New Media group will consist of three main disciplines – editorial, social media and web development.

- The centerpiece of the MBN new media strategy is the development of ONE comprehensive news website rather than two

  - Harness all creativity and uniqueness into ONE site not two
  - Aggressive promotion of this site as the **one** primary destination for Arabic language news
  - Aggregate Web hits instead of spreading our hits across two sites
  - The creation of one **MBN Digital team** whose focus would be on this one site

- Radio Sawa is in development of its own iPhone app that will stream each of Sawa's seven signals.