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May 3, 2004

Dear Colleagues:

You might be interested in the C-SPAN-like Internet television services, discussed in the enclosed draft plan, offered by four leading institutions (e.g., the World Bank's B-SPAN Internet channel) in policy, science, health, and economic development for national and global audiences. The idea of a national or global Internet service may seem impossibly complicated and expensive, but the technology is well-established and it works well.

A global Webcasting service could be offered without charge in two (but not all) respects: 1.) without a charge to individual users; and 2.) with only a fixed charge (for "unlimited hits") to a sponsoring organization.

- The enclosed draft plan is for the project at the Brookings Institution, [www.us-islamicworldforum.org](http://www.us-islamicworldforum.org), which had an initial meeting with people from 28 countries & President Clinton as keynote speaker in Qatar in January. The next step, as Peter Singer at Brookings puts it, is to raise the funds: If anybody has access to funds & a slightly longer term vision, I think it is this group. As about 90% of adults in Islamic countries say that they hate America, it's about time for our foreign policy Establishment to get some fresh thinking underway.

Sincerely,



(Dr.) Lloyd S. Etheredge, Director  
International Scientific Networks Project

Budget and Budget Narrative:  
US-Islamic World C-SPAN Service

BUDGET

- I. Videotaping, digitizing, editing, encoding
- A. Level I (Major events) - Professional services @ \$350/hour  
est. 35 events/year @ \$2,000/event \$70,000/yr.
  - B. Level II & III events - authoring grants to participating institutions  
- Hardware: high-end camcorder, suitable PC & software  
est. eventual 5 institutions/country & 30 countries @ \$6,500 \$975,000<sup>1</sup>  
- Webmaster/authoring expenses @ \$1,000 each/yr. = \$150,000/yr.
- II. Website
- A. Development (over initial 12-18 months) \$50,000
  - B. Add Website graphics, highlight boxes, bilingual summaries,  
speaker bios, indexing of Level I events @ \$300 x 35 \$10,500/year
  - C. Site Maintenance & upgrades incl. bilingual \$20,000/year
  - D. Partial support for seven subject-area Webmasters @ \$10,000 \$70,000/year
- III. Internet television broadcasting: online storage + an “unlimited hits” fixed  
cost package: per hour of programming encoded at 56Kbps & 256Kbps.
- A. Level I (Major events) - w/ permanent online storage &  
World Bank Indexing \$300
  - B. Levels II and III - with one year of online storage \$120
- IV. Enrollment, Organizing & Marketing Costs
- A. Director of Development for the first 12-18 months, re Website  
development, contract negotiations, enrollment of critical mass  
of startup users, \$1,500/month travel budget. ? Brookings sr. rate +  
\$27,000 travel
  - B. Annual enrollment/marketing budget ?/year
- V. Other Administration
- A. Advisory committee incl. Level I grantmaking ?
  - B. Director of Internet Services ? Brookings rate

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<sup>1</sup> This is a critical startup investment; it might be wise to increase it for the US.

BUDGET NOTES AND NARRATIVE<sup>2</sup>

I. Introduction

Several leading nonprofit institutions are using new Internet capabilities to offer a desktop television service (Webcasting) to national and global audiences.<sup>3</sup> Although the idea seems as if it would be impossibly complex and expensive, the technology is affordable and works well.

These budget estimates are based on four nonprofit examples:

- 1.) The World Bank's B-SPAN Internet television station, accessible through the Bank's home page, [www.worldbank.org](http://www.worldbank.org) or directly at <http://info.worldbank.org/etools/bspan/index.asp>;
  
- 2.) The Kaiser Family Foundation's Healthcast/"Health Policy as it Happens" service ([www.kaisernetwork.org](http://www.kaisernetwork.org));

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<sup>2</sup> Prepared by Dr. Lloyd S. Etheredge - Director, International Scientific Networks Project, Policy Sciences Center Inc. Contact: [lloyd.etheredge@yale.edu](mailto:lloyd.etheredge@yale.edu), 301-365-5241. These are draft estimates for initial discussion: please do not quote without permission.

<sup>3</sup> For a sample of other uses: [www.c-span.org](http://www.c-span.org), [www.tvworldwide.com](http://www.tvworldwide.com), [www.real.com](http://www.real.com). The [www.comfm.com](http://www.comfm.com) guide lists 3,408 Internet television stations.

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3.) The New York Academy of Sciences [www.nyas.org](http://www.nyas.org) conference & *ebriefing* service for its 24,000 members in 150 countries.

4.) NIH's joint service of its 27 constituent Institutes and Centers, [www.videocast.nih.gov](http://www.videocast.nih.gov).<sup>4</sup>

- In each case, the technology is part of a wider strategic purpose. Each of these services has assessments of their different clientele and how each finds value from the service. Each continues to evolve. Except for the bare-bones science service at NIH, the history of each service is that it continues to add features to its Website (e.g., a highlights box, a summary, a transcript, an integrated index so a viewer can (for example) “click” on a subject and go to the eighth minute of the second speaker at a symposium where a topic is discussed).<sup>5</sup>

- Except for the World Bank, each service makes substantial use of outside professionals

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<sup>4</sup> Many people have been generous with their time. I especially want to thank David Shaman, Producer of the World Bank's B-SPAN; Larry Levitt, Editor-in-Chief at [kaisernetwork.org](http://kaisernetwork.org) and Chris O'Leary, Dave Rinaldo, and their associates at Mind & Media, [kaisernetwork.org](http://kaisernetwork.org)'s primary contractor in Northern Virginia; Sarah Greene, Director of Publishing and New Media at the New York Academy of Sciences; Kevin Davis at SAIC ([saic.com](http://saic.com)), the senior applications engineer for NIH's primary contractor.

<sup>5</sup> I understand that the NIH site will upgrade this fall.

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with whom they have developed long-term relationships.

- There are important opportunities for cross-listings with these and other (emerging) public domain/nonprofit services. For example, relevant World Bank conferences and lecture series can be listed on the US-Islamic site with a “click and view” button linked to the World Bank site. Or, in the area of health, the US-Islamic site could be a portal to relevant conferences at NIH.

- Internet television services provide good audio and a small television window.<sup>6</sup> Slides, papers, transcripts, etc. can be provided in standard, full-screen format or in larger, separate windows.<sup>7</sup>

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<sup>6</sup> The video helps to convey who the people are, which can be an important contribution to creating US-Islamic relationships. Both the producers and users of leading services are in a process of innovation and experimentation concerning the role of video: Different users access different presentations in different ways - reading summaries or transcripts, listening to an entire presentation or only a portion, listening to audio while viewing synchronized slides at full-screen (e.g., scientists who stream lectures in the background in their labs), using fast-forward controls to sample or skim. The latest release of RealVideo (10) delivers a VHS quality picture in the small window with an Internet connection of 150Kbps.

<sup>7</sup> See footnote 24 (below) re separate windows and products from [www.accordent.com](http://www.accordent.com).

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- I use the terms “Internet television,” “broadcasting,” “Webcasting,” and “video-on-demand” interchangeably. However, the budget is based on assuming that individual users access the site/service at their convenience. The analogy to commercial television - sending the identical signal to all members of a mass audience at the same time - while it can be done over the Internet (and is done for entertainment events) requires a different level of service, preplanning, and specialized contractors who can get high quality results on this scale via the global Internet architecture.

- In the long-run the technology will improve steadily and, in a sense, take care of itself. The technology is not as important as the content. And the content, in turn, is a subset of the more important task of identifying potential linkups between people that will have mutual benefits.

### II. Videotaping, Editing, Digitizing, Encoding

Level I: \$2,000/event

Levels II & III: \$6,500 startup/institution

\$1,000/yr./institution

The basic step to record (audio + video) an event at near-broadcast quality can be done

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with a high-end camcorder (e.g., Panasonic) in the \$3,000 - \$4,000 range, one microphone, and a single experienced cameraman.<sup>8</sup> With this level of technology, you do not need extra lighting, but you need technical training to understand the camera and how to get the best results. Basic rates for cameramen are about \$75/hour.<sup>9</sup>

The next steps (digitizing, editing, and encoding) require a midrange PC with a video capture board, FireWire port, and basic editing and encoding software. About \$2,500. There are three encoding systems: RealSystem, QuickTime (Apple) and Windows Media Player. For the US-Islamic service, RealSystem is the right system: both the World Bank (the major Webcaster for development) and NIH (the major Webcaster for the international

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<sup>8</sup> With a one camera system you will not see questions being asked from the audience. The one camera system is used for about 80% of what people are now doing.

<sup>9</sup> There are tradeoffs in the selection of video cameras: a \$1,000 camera can produce good results with professional lighting.

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biomedical community) use it.<sup>10 11</sup>

Thus, the hardware & software cost for a near-professional authoring package is about \$6,500/site. I have added \$1,000/year, which would support training of a Webmaster or other local personnel to use the camcorder (preferred) or to purchase professional services at a local wage rate, and for other uses in the long run (e.g., partial support for Webmaster travel to a regional conference, upgrading software.) A participating institution would agree to contribute at least five hours/year of program material (150 institutions = 750).

- Editing (light editing, in this case) means adding an opening slide with a title, disclaimers, etc. Also, tightening: removing extra footage at the beginning or end, coffee breaks, or the 1-2 minutes while a speaker tries to get his PowerPoint slides to work, standardizing sound levels. It is an option used by all four sites. Editing usually is billed at

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<sup>10</sup> Authoring requires either RealProducer (free) or RealProducer Plus 10 (\$199) software. There is a wide range of editing packages: In early 2004, PC Magazine gives a top rating for basic editing to Power Director 3 at \$80. A desktop PC running at 2.4+ Ghz is considered a good basic choice. Some video capture boards are finicky, especially if used with laptops; it is best to base a choice on the model of PC and recommendations of the manufacturer. The Osprey 210 (and higher, \$199+) video capture boards from [www.viewcast.com](http://www.viewcast.com) are used by video engineers at RealProducts, at the US Senate, and several other sites.

<sup>11</sup> Viewing software for the RealProducer format is free and can be downloaded easily over the Internet.



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about \$75+/hour; standard software includes fast-forward, 2x, etc. options that speed a simple job.

The current practice is to encode streams at 56Kbps (for users with a dial-up telephone connection) and at 256Kbps. Both streaming rates are designed to provide good audio (which for the human voice can be done with about 5Kbps).<sup>12</sup> Encoding is simple: start RealProducer, identify the input source and the name for the output file, check the options that you want, and click “Start.”<sup>13</sup> Stanford has a high volume service that charges 0.60/minute or about \$36.00 for an hour.<sup>14</sup> Or it can be done on a desktop while a Webmaster multitasks and has a cup of coffee and reads the newspaper.

At this point, the basic rule is that most outside contractors charge in the \$75/hr. -

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<sup>12</sup> Scientists typically have prepared papers and slides, which can be uploaded quickly and separately.

“Final mile” connections in UDCs and over 56Kbps dialup connections can be shaky and produce jerky results: one solution can be to encode a 36 Kbps stream or an audio file with synchronized slides. For the recommendations of an engineer experienced in early international work: “Recommended Maximum Target Bit Rates,” in Steve Mack, Streaming Media Bible (NY: Hungry Minds, 2002), p. 800.

<sup>13</sup> At 56,000 bps x 3600 seconds/hour, the smaller file will be about 200Mb; at 256Kbps, the larger file will be about 920Mb; encoded jointly (300Kbps), a one hour program file will be about 1.08 Gb.

<sup>14</sup> <http://www.stanford.edu/dept/itss/services/streaming/rates.html>

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\$90/hr. range for each of these services. An “all professional” package for everything is somewhat more economical, typically about \$300 - \$350 per final hour. Package rates for ½ day, full day, and multi-day conferences also reduce the cost/hour. A full day with 6-8 speakers is about \$1,500 - \$2,000.<sup>15</sup>

- The budget discusses three levels of events. Here is what I mean:

- Level I - Major Events. For example, President Clinton’s speech in Qatar; plenary sessions from the world AIDS conference in Thailand; a 2-3 day expert conference on water desalinization in Saudi Arabia. The budget rule: use professionals who do this full-time, and contract for everything.

Level I programs also are political choices for the US-Islamic project: They define the visibility of the project and should be featured on the Welcome page of the Website. Who controls the grant money, and how they make the decisions, is a political choice that will be visible to all participating institutions. On average. I’d

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<sup>15</sup> It is straightforward for a well-connected contractor to arrange for international coverage. KaiserNetwork, for example, is covering the international AIDS conference in Thailand and a video producer from Mind & Media, their contractor, will fly to Bangkok to coordinate coverage. Mind & Media is part of a global network of professional television camera crews used by CNN and they use this network to hire local technical crews

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think that a Level I event every 10 days would be a good pace.

- It may be possible to negotiate cost-sharing agreements. The organizers of Level I events usually want to accelerate progress and a partnership with an US-Islamic service to provide a global forum for their plenary sessions (etc.) would be attractive. Videotaping part of the event for a global policy audience is a small addition to the cost of the entire conference. A de facto global podium also can be an attractive incentive for presenting at a conference.<sup>16</sup>

- Level II - Routine Events. Routine events are those authored by participating institutions, with an expectation of at least five hours/year. (For example, the desert agriculture speakers' series at UC Davis, distinguished speakers' series at APSIA (Association of Professional Schools in International Affairs) schools and similar policy forums in the Islamic world). In the long run, Level II programs will be part of the routine, work-a-day success of the project - i.e., the project will be succeeding when people routinely log onto the site and receive value for what they are trying to

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<sup>16</sup> It sometimes is argued that better investment in communications technology will reduce travel budgets. On the contrary, the experience of science since the invention of the Internet suggests that international travel increases as a global creative process begins to emerge.

do.

The budget rule for Level II: provide a startup authorship package for hardware, software, and either Webmaster training or initial videotaping services.<sup>17</sup> In the long run, each participating institution should learn to use the technology. And providing them with their own authoring package is a basic symbolic statement of the US-Islamic project - they are full partners.

Level III - After Hours. Level III would let institutions or groups use the technology, at the local institution's discretion and subject to an Acceptable Usage agreement: student conferences, mathematicians (who happen to be in the Islamic world) who want to create colloquia series on topics of mutual interest with US mathematicians, colloquia series on art history and preservation linking professional staffs at museums. Etc. On a space-available basis, the US-Islamic service would keep the programs online for a year. An After-Hours section on the Website would be

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<sup>17</sup> The best solution would be for Webmasters to learn to operate the video cameras. The local Webmasters (perhaps, often male and interested in the technology rather than the content) are key allies to provide energy and growth for the system. I also suggest that grants include an allocation for regional travel to at least one Webmasters' conference/year. For this system to work, its Webmasters should find an exciting personal and professional future in growing the system.

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managed on a volunteer basis by one or more of the Webmasters.

- ☛ Strategic Priorities: Critical Masses & Who Goes First? For an US-Islamic service to succeed, there must be a critical mass of users on both sides with an interest to communicate. I would suggest three startup categories: a.) health (including region-specific diseases like malaria); b.) foreign policy think tanks and graduate schools of international relations; c.) development-related science - e.g., desert agriculture (perhaps, also, rice research).

### III. Website

Development	\$50,000
Level I add-ons	\$300/event for graphics, highlight boxes, bilingual summaries, speaker bios
Maintenance	\$20,000/yr. (incl. bilingual)
Webmasters	\$10,000/yr./subject-area (partial support)

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Well-designed Websites use similar layouts and graphical elements across different pages. Thus, once the template is established and clients know exactly what they want, a good programmer can mass produce simple Web pages quickly (e.g., \$50 to fill-in-the-blanks).<sup>18</sup> Similarly, there is nothing mysterious about creating a Web page that supports Internet television: the [www.us-islamicworldforum.org](http://www.us-islamicworldforum.org) Website achieved the capability of broadcasting former President Clinton's speech by Internet television by adding a pointer to a file that existed on a solis.net server, a line of code beginning: `<a href="http:// www.solis.net/brookings/clinton_broadband.wmv . . .>`.

I am recommending \$50,000 - not all of it to be spent at once - because the Website design conveys the personality and spirit of a project. Clients need to go through a process of thinking about what they want to do, and often they want to see different ideas or examples - and it is a creative process that requires professional time of a Web development team. A good starting point is to list the formal content - and also a series of adjectives - to describe the ideal site. For example: "open," "inviting," "easy to find things of value that I don't find elsewhere," "goal-oriented," "beautiful and graceful in a subtle way, with Western and Islamic graphic elements," "I check it out almost every day to see what's happening"

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<sup>18</sup> It is easy to build upon existing Websites. When you are looking at an Internet page in Internet Explorer, click on "View" and then "Source," and you will see the program code for the page.

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“enrolling.” A good Web design team does the technical work - and also brings the adjectives to life.

For example - if we take [www.amazon.com](http://www.amazon.com) as an open, inviting, and user friendly site - the US-Islamic template could have similar tabs across the top: “Welcome” (the home page), “My Page” (customizable, drawing from many different elements and options), seven major subject Tabs: “Health,” “Education,” “Community,”<sup>19</sup> “Economics and Business,” “Agriculture,” “Environment,” “Culture and Arts,” and a final Tab: “After Hours.”<sup>20</sup> In turn, each of the initial pages at each Tab could include, as one of the design elements, a statement of relevant goals for international cooperation and a visual display of the extent of the unsolved problem and the rate of progress. (The goals could come from the UN Development goals, or be created or modified by the participating members).<sup>21</sup>

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<sup>19</sup> “Community” refers to shared values and how people relate - human rights, planning for humanitarian emergencies, conflict prevention, philanthropy, etc.

<sup>20</sup> The site also would be user friendly in many ways - for example, like [amazon.com](http://amazon.com), it could tell me “people who viewed this program also viewed . . .” Or it could give me a list of the Top 10 Programs on the site. Or it could notify me when a conference is posted in one of my areas of interest. Etc. There also might be News and Weather features on the Welcome page, etc.

<sup>21</sup> There also could be a resources section at each subject Tab. At the Education Tab, for example, a user might find that MIT is beginning to put the lecture notes, slides, problem sets, etc. of its 2,000 courses online for international access without charge, and this may not be widely known in the Islamic world. Anyone can link to the basic astronomy course, etc.: <http://ocw.mit.edu/index.html>. (The current opening page features a

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[For example, one UN/World Bank goal is to provide clean drinking water to everyone in the region: the Health page would include a map of the region with each nation color-coded by the extent of the unsolved problem; each map can be “clicked” to provide access to details, so a user could see a map of Nigeria with each village marked in green or red depending upon its status - and users of the Website can watch maps turn from red to green as cooperation succeeds. A good website - to put it another way - can be an *enrollment* device. It can convey a message that we are cooperating not because it is a nice thing to do, but because the people who use this site want to work together to solve real problems and provide real benefits to people throughout the region.]

Reciprocal Goals. It also will be useful for the US-Islamic project to specify reciprocal goals. For example, developing online resource materials for teachers and students to support units about Islamic world history, culture, and values for US grade school, junior high, and high school levels - and achieving the goal of including such units in the curriculum in American public schools. Or resources for learning Arabic as a foreign language.

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photograph and picture of an educator in Pakistan who uses the site several times a week.) An example of resources for K-12 teachers that could be featured on a US-Islamic site is the Annenberg Foundation’s [www.learner.org](http://www.learner.org); their site also includes streaming video.



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- US-Islamic Heritage Users. There are millions of Americans with Islamic heritage and current ties. There may be many uses for the site, and the service, that will be of interest to them. The “My Page” Tab could be enriched with many options.<sup>22</sup>

- Bilingual investments. I assume that there will be both English and Arabic versions of the Website. Given the spirit of the project, you might want to experiment with having both languages on the same page (which is nonstandard). The budget includes funds for native-speaking copy editors in both languages: Especially given the purposes of the US-Islamic project, it will be important to get the spelling and grammar correct and to have simple, clear writing.<sup>23</sup>

- Other Design Elements. As the site develops, it will be worthwhile to experiment with additional value-added features that help different users to find value quickly.<sup>24</sup> Here are

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<sup>22</sup> <http://www.yahoo.com> is an example of a portal site with a customizable home page.

<sup>23</sup> And it takes longer to write brief summaries. I am told that the highest paid writers at National Geographic are those who write the brief captions for its pictures: the value that most of their readers obtain from the magazine is from looking at the photographs and reading the captions.

<sup>24</sup> A growing number of software products help to automate these processes. An interesting set of Presenter products for RealPlayer by [www.accordent.com](http://www.accordent.com) can open three windows on a user's PC and display streaming video in one window, the speaker's (synchronized) Powerpoint slides in a second (larger window), etc. There are several demos

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several examples, with drawn from the NYAS site:

- Transcripts (\$300/hour, \$1,500/day - they must be checked by a professional, who can proofread technical terms and names).
  
- Captioning (requires transcript + \$200 for an hour); provides additional options for access by people with handicaps; also may help people who are listening to a presentation that is not in their native language.
  
- A professionally-written summary and a highlights box, plus speaker bio, index links to resources, and bullet summaries of recommendations for the research agenda and/or next steps (\$800/hour, \$3,000/day for 6-8 speakers for professional science writers).
  
- Unique graphics/art design for each Website entry (\$100).
  
- Translations (which none of the four sites provide).

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on the [www.accordent.com](http://www.accordent.com) Website, including a presentation from the Yale Cancer Center using PresenterOne.

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- An audio feed linked to slides for users with more limited bandwidth in UDCs (\$100).
- Uploading of scientific papers and slides that already are in electronic form (\$25).
- Site-level editing of copy, with specialist indexing and cross-referencing. The specialist indexes can be linked to specific points in transcripts or presentations - e.g., so you can jump directly to the start of the eleventh minute of the roundtable session of the 2004 AIDS conference in Bangkok where they begin to discuss . . . (\$200/hour, \$800/day).
- On-site search engines are a standard feature of Website design, but the actual indexing systems that should be used probably are much more advanced & can require a continuing research program to understand how different types of users think about, and ask questions about, the world.
- A good Website design might include online multilingual dictionaries and translation aids.

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Subject-area Webmasters. The budget provides a block grant of \$10,000/year to support each of seven subject-area Webmasters. They should be drawn from the pool of Webmasters at participating institutions that already have a leading role in each area. The grants should go to each institution for partial support of their time and resources for their use.<sup>25</sup> If these are good choices, they will be leaders who drive the growth of the service and its online resources.

- Maintenance. The development of a Website probably should include a contract for long-term maintenance of the site. (Even if the US-Islamic project hires its own Director of Internet Services, his/her primary focus should be on building new services and relations with dozens of other Webmasters at current and new participating institutions.) A forward-looking company also can be a source of innovative ideas and provide ready support for experiments with emerging technologies (e.g., live videoconferencing). A mirror site in Qatar and/or India would be helpful to understand cultural/policy currents, provide more efficient Internet links, and to help with translations.

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<sup>25</sup> One use could be professional development expenses to attend an annual meeting of the US-Islamic project, an annual meeting of the Internet Society, etc. It would be helpful for the annual meeting of the US-Islamic project to include an annual meeting of the Webmasters of each participating institution.

IV. Internet Television Broadcasting

Level I: \$300 “unlimited hits” package per 1 hr. - online permanently (World Bank)

@ 35 Level I events/yr. & 3 hrs./event = 105 hours/yr. = \$31,500/yr.

Level II: \$120 “unlimited hits” package per 1 hr. - online for 1 year

eventually @ 750 events/year @ 1 hr./event = \$90,000/yr.

Level III: \$120 “unlimited hits” package for 1 hr. - online for 1 year

eventually @ 200 events/year @ 1 hr./event = \$24,000/yr.

A couple of basic points:

- Unlike international telephone service, the cost of Internet television broadcasting is unrelated to distance: a one-hour link from Washington, D.C. to Princeton is the same price as a one-hour link from Washington, D.C. to Jakarta or Riyadh. The pricing system is based on the size of the pipeline (on-ramp) leased by an Internet service provider: For example, a T3 connection is about 40+ Mbps and leases at about \$1,000/month. If users anywhere in the world want to stream at 256Kbps, this means that about 160 of them can be handled simultaneously (or 640 at 56 Kbps). So, in principle, \$1,000/month buys from 115,200 to 460,800 viewing hours/month [24 hours/day x 30 days/month = 720 hours/month; 720 hours/month x 160 viewing hours/hour (=115,200), or 720 hours/month

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x 640 viewing hours/hour (=460,800)].<sup>26</sup>

In turn, this means that the new, emerging pricing packages from institutions like the World Bank are simply to charge a flat rate per program and to guarantee “unlimited hits” for the programs of nonprofit users. (They are assuming a modest number of users for most programs, and peak loads from foreign and domestic users that occur at different times.) And there *is* huge unused capacity: anything that an adult-audience US-Islamic project uses, even in several years, will be a small fraction of what a freshman dorm at Stanford is using on a weeknight.

It will require negotiations to get this kind of package deal. Stanford offers it to on-campus users at \$10/month for a 1Gb file (about one hour). The World Bank - which has used its market clout to contract for very large Internet capacity at wholesale prices - is developing an option to offer permanent online storage and unlimited hits (i.e., free global television) for development-related programming that meets their standards for a modest fee (probably \$300 or less per one-hour program). The price will come down, because there are huge economies of scale. (And it also is true that these charges themselves are, in a sense,

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<sup>26</sup> At wholesale, on-line storage now sells, in quantities of 1,000 Gb (1 terabit) for about \$1,000 - roughly \$1/Gb. This is the cost of the disk itself, not the manpower or overhead of the institutions that has to maintain, backup, and troubleshoot the system.

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retail: the marginal cost to the World Bank or to Stanford is closer to zero.)

☛ My recommendation is that the US-Islamic project negotiate a partnership with a large *simpatico* nonprofit organization that purchases Internet capacity at wholesale and already is doing Webcasting.<sup>27</sup>

### V. Enrollment, Organizing, and Marketing Costs

Research suggests that there will be an “S” curve of growth. In each area there will be a slow start and then, as a critical mass of users begins to contribute material and find useful material from other contributors, the service will take off. I suggested (earlier) that the US-Islamic project identify key startup groups of potential users and contact leading institutions

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<sup>27</sup> I suggest beginning with the World Bank and several leading research universities like Stanford, Princeton, etc. and then using their prices to see if other options can be negotiated (c-span.org itself, U of Maryland, or others). Alternatively, the US-Islamic project could partner with the Brookings Institution to pay for a T3 dedicated on-ramp and RealSystem server. (An Internet Service Provider must divide its on-ramp into different streams, and send each stream at a steady rate, etc. To operate a serious Internet television service they must acquire a RealSystem server at about \$21,000/year (nonprofit) for license, upgrades & support (\$6,000/yr. for upgrades and support in later years). There are discounts for acquiring two, which may be desirable as a backup for a high performance site. But it could be highly cost effective to upgrade the Brookings site or another site in the Islamic world.

An important caution is the need for security: as the US-Islamic site becomes more visible, it can attract hackers on a global scale, including those who want to add political comments. A good ISP should provide security, backup, 24x7 technical support and high reliability (including over university holidays, etc.).

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in each category to create a critical mass quickly. Some areas will be easier to organize than others.

[One of my concerns is that the optimal startup budget for authoring grants might need to be larger. There are several dozen APSIA schools and leading, graduate-level Middle Eastern studies programs in the US. If money is available for authoring grants to each institution, a critical mass of programming/users will be easier to obtain. A similar potential for more rapid growth also would apply to health, where there are many research centers. The size of the budget should depend upon how quickly the US-Islamic project wants to move, and in what areas of mutual benefit.]

- We are at a crucial historical period where US-Islamic relations need to be addressed urgently and - beyond traditional broadcast media - with a technology that helps, in a political sense, to build new networks of working relationships and mutual benefits.<sup>28</sup>

Someone at a high level in the US-Islamic project should probably make a personal visit to

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<sup>28</sup> There has been discussion of creating a foundation for international broadcasting, perhaps on the model of the Corporation for Public Broadcasting + VOA. If there are private funds in this area, the US-Islamic C-SPAN/linkup service would be an attractive and innovative recipient. As Ambassador Djerejian's report noted, youth audience are important in the demographics of the Islamic world, and Internet-based technology (including the Education and After Hours sections) may be especially appealing to a segment of this age group.



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each participating institution to accelerate enrollment. There also will be several agreements to be discussed, including Basic Participation, Acceptable Usage, arranging for institutional logos & descriptions for the Website. There also will need to be substantial marketing and a strategic plan, as the value and nature of US-Islamic relations - and the genuine value that this site is going to add - will need to be explained.

### VI. Other Administration

Advisory Committee	?
Director of Internet Services	? (Brookings rate)

It will be helpful, for fund-raising and advice, to organize an advisory committee for the US-Islamic Forum service. One of the functions of the committee will be to allocate \$70,000/year in grants to cover Level I events and the members will play a key role in the development of the US-Islamic project. The question of who gets money, and how, may become salient and it will be helpful to have a committee and process that confers legitimacy.

There should be a Director of Internet Services - a Webmaster, but more oriented toward

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the inter-institutional/outside work. One of the ongoing responsibilities is likely to be fundraising. Our domestic C-SPAN is underwritten by the domestic cable television industry as a philanthropic donation (and in lieu of public service requirements on individual channels). It seems entirely reasonable that telecommunications companies and others doing business with the Islamic world might make an equivalent commitment (perhaps especially if there are strong packages in health, education, and culture). CNN? Oil companies?

If you decide to do this, it is best to begin boldly, with a substantial startup budget and to establish critical masses of programming, and users, in areas that provide substantial mutual benefit.