

Video and audio
streaming services



Business proposal

Video and audio streaming service (IPTV)
(2008.01.25)
Prepared by Zoltan Papp.

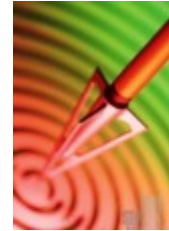
Company purpose

To provide duplex video and audio streaming services to broadband internet subscribers. (IPTV)

Problem

The Internet is a two way communication medium while the traditional set top boxes mostly provide a one way broadcast flow of information. What could be changed ?

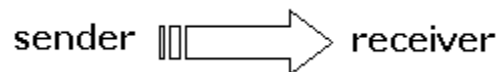
- **The set top boxes could be made cheaper and smaller by using commonly available pc parts** such as
 - o network card for communication
 - o audio and video cards
 - o any other component that could be required, switch for example



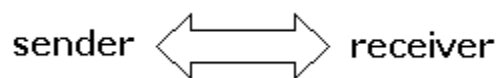
Now, all these components could be integrated together as it is the case with many portable and small consumption devices. Two examples that could be mentioned are [Microsoft's Xbox](#) and [Vonage's V-portal](#).

- **Interactivity could be increased.** Since the internet is a duplex medium, the set top box's dullness could be replaced by interactivity comparable to the pc by using simple applets.

**Simplex: one-way communication*



**Duplex: two-way communication*



Currently, most people have very **limited access** to live high quality video streams on the internet. Most portals or applications stream low quality or pre-recorded/looped video content such as [Winamp IPTV](#) or [wwiTV.com](#) portal. Real enjoyable service basically only exists via cable service providers or some form of simplex video delivery method. I think that there is room for duplex/interactive and high quality video content too.

The network and the technology is in place, the broadband-based **service is missing.**

Solution

I think that people have been very tolerant with technology. Let us admit that in most cases we used to adapt to the clumsiness or availability of the technology. What the future is I think is that people drive services and access them when and where they need it. The internet is one media that enables access to services from a wide variety of locations. I believe that such services are still missing and a company could be built that empowers people by letting them access services where and when they want to access it. It is not about what we can have, it is about what we want. I am aware that there are video services such as YouTube but it still feels like a limited services in its nature since video streaming and further applications that could be tied with it are a lot more organic, open and flexible than watching uploaded videos from the internet...



Show where your product physically sits

My product would physically sit on media delivery devices such as a TV or pc or any public place where motion picture is in need. In other words, the product would be delivered via television sets and screens.

Provide use cases

(1) Connect the audio/video port of the PC with the TV/Home theater system and watch interactive video streams via the TV. Since service access could be 100% monitored, all services including advertising could be tailored towards the expectations and interests of the customer just like Google makes advertising content sensitive. A commonly available video card that supports such a function costs about 50USD. ([ASUS EAX1050](#) etc)

(2) Manufacture an adapter box like Vonage did and stream interactive media directly into your existing TV/home theater system. Such an adapter box would need to have the following ports :

- Ethernet/RJ-45 port for the internet
- SCART/S-video/RCA for the audio/video content
- PS/2 for remote mouse/keyboard, (in case of USB mouse/keyboard, a PS/2-USB converter plug could be used)
- maybe a USB port to be able to connect a USB drive to watch or upload media from it.

The box would obviously need to have the following controllers integrated :

- Audio/video
- Network card
- Web server
- I/O

(3) I have long been watching dating service sites and I think that nothing compares to the excitement of getting to know someone in real time rather than waiting for a reply. Online chats are available but what I found captivating is when I used to use p2p file sharing applications in which it is possible to chat with someone who is interested in the same type of music or media that you are. Having a common interest could be the key to find new friends while both of you are online at the same time. Social networking is on the rise, this product could further provide an opportunity the demand of meeting new friends.

So IPTV could turn today's passive TV/cable experience into an interactive entertainment and news source.

*This would be considered as an extra product on top of IPTV.

Historical evolution of my category

The streaming media market really began to emerge in the mid 90's when technologies such as [RealAudio](#) debuted and radio stations started putting live and on-demand audio content on the Internet.



The growth at first was slow, but the rate of adoption of streaming technologies has accelerated exponentially in the last 5 years.

The [following article](#) illustrates this phenomenal growth in streaming related spending and shows that dollar value of all streaming media advertising was estimated to have grown to a \$1.38 billion industry in 2007.

Trends

- SVoD is projected to be the [No#1 short-term investment](#) for cable TV companies.
- According to a [study carried out by Internet World Stats](#) shows that broadband access increased by **249%** in the past 7 years.
- The broadband market have reached **86 million** in 2007 [according to Jupiter Media research](#).



Demographic distribution of broadband users is concentrated in urban areas. Among wired urban areas, the west coast is dynamically growing as the diagram indicates. Obviously, these urban areas offer more lucrative investment and indication of future growth. Top 3 urban areas are concentrated in the Northern West coast of the United States.

→ [Top broadband cities](#).

Unfortunately, I no longer have links available to the information I found on the internet. Statistics have obviously shown that the west coast is dynamically growing and the San Francisco bay area has among the highest internet traffic in the United States. These statistics were on the following websites :

1. [Internet.com](#) (west coast is dynamically growing)
2. [Cybergeography.org](#) (the San Francisco bay area has among the highest internet traffic)

One city has remarkably kept its leading position in the utilization of network technology. San Francisco is way ahead of other urban areas. Broadband users in San Francisco also spend less time on the internet.
*Article no longer available.

However, there was a book published on the above research :

[Atlas of Cyberspace](#), ISBN : 0201745755

I think that this book have very important indicators of the evolution of the Internet's usage.

Why now?

Entrepreneurship is getting extremely popular. People more and more want to take ownership of their own life and probably be independent. Surprisingly, I think that it is a realistic trend since both services and technologies are now advanced and cheap enough to start a business for many people. This ultimately leads to higher quality of services since small business owners are more dependent and will be more interested in taking risks to find new products and services and stay ahead of the curve and maintain their competitiveness. One such example I would like to mention is Vonage in contrast with larger phone companies.



On the other hand, I think that there is an ever more appetite for comfort and pleasure. People discovered the practicality of portable mp3 players, digital cameras, mobile phones etc, and I think that more is expected from the industry.

Apart from it, there is no magic, the product must be good to sale. I believe in surprising people with something new that clicks into their needs.

Now, combining the above two with the recent advancement in technologies such as reliable VoIP, cheap broadband and finance services; the infrastructure is perfect for being productive. T1 services are available for **less than \$400**. [Vonage](#) (VoIP) provides **free unlimited calls** in US and Canada for **\$50/month** as well as international call rates on **10%** of traditional phone companies.

1. The number of broadband Internet subscribers has now reached a critical level into what worth to invest technologies that are based on high speed Internet access.
2. Streaming media is in its infancy. Nobody provides efficient service for the public, current issues are standardization of protocols and copyright law protection. Although the picture is changing rapidly.
3. Among all streaming media types, **news, information and music ranks the highest** as the [following page](#) shows.

Wireless/802.11 networking now allows the access of broadband services in public areas. This fosters the emergence of new services coexisting with current broadband services. Current speed of commercial 802.11 products is [300Mbit/s](#). Wireless trend indicates the emergence of the [following urban areas](#).

Market size

I am targeting digital television users whom already subscribe for TV service. The cost spent on digital TV and other services can be replaced by video on demand over broadband connection. Ideal customer base is who already has a broadband connection as well as digital TV. As an example digital television subscribers were estimated to have grown [from 62 million in 2001 to 350 million in 2006](#).



- I calculated that broadband access increased **245%** in the past year. The broadband household market is expected to reach **86 million** by 2012 [according to Jupiter Media research](#).

Hence, the **current** potential market is **less than 90 million users**. Video streaming is clearly in its infancy but technology is already available for a considerably cheap price at high performance.

Calculate the TAM(top down), SAM(bottoms up) and SOM

TAM :

The TAM of IPTV in the United States is [212,080,135 as of July 2007 according to Nielsen/NetRatings](#) since there are this many Internet subscribers in the United States. This comprises of **70.2% of the total population** of the United States.

SAM :

The SAM of IPTV in the United States [is about 65 million](#) since there are this many broadband subscribers in the United States. [This comprises of 21% of the total population](#) in the United States.

SOM :

The current SOM of IPTV is 0 at the moment since no company have been founded yet.

Competition

Competitors :

- Apple Corporation **launched its online movie rental service** on the 16th of January, 2008. Due to its success in the online audio sales, i think that Apple Corporation has the highest potential of successfully transitioning itself into the movie rental market too. Hence, i think that Apple Corporation is the No#1 competitor for the IPTV service.

There are several points i think, where Apple Corporation's movie rental service could be better improved and shifted towards a more interactive and richer IPTV experience :

→ Apple Corporation is using the term 'downloading' movies rather than streaming. It has several implications, first i think that the word 'streaming' describes better what happens in technological terms as well as creates a better connection with the service provider. Downloading something is a more passive process than streaming data in real time. Downloading could also be interrupted but streaming is something that is not referred to as a process that should be interrupted. So i think that by understanding the meaning of the word streaming, people will value the service more since it is obviously a more advanced way of delivering data to customers. On top if it, streaming is not too difficult to be understood.

Some might also misinterpret the word 'download' and will think that the watched movies can be saved on the customers pc. That could be possible, just like in the case of audio files, but that needs DRM technologies to be accompanied with.

Introducing new words in a company's products or services is, i think a well experienced practice. It can distinguish a company from others and also indicate a niche that customers can hang onto. For example, **Intel Corporation** introduced hyperthreading technology with its multi-core processors.

I am aware that Apple Corporation probably wanted to keep its service as simple as possible but i think that Intel Corporation's message is clear, **innovation**.

→ The resolution of the downloadable movies on Apple Corporation's website are 640x480 which doesn't even meet the DVD resolution which is 720x480 (NTSC). I think that even higher resolutions could be achieved by using progressive technologies such that EdgeStream Corporation (in Laguna Niguel (L.A.), CA) introduced by [using various innovative technologies](#).

→ Please take a look at [EdgeStream Corporation's case study](#) using [Intel Corporation's DSTB chipset platform](#) for EdgeStream enabled IPTV set top boxes.

→ Please take a look at live demos on EdgeStream Corporation's website at <http://www.edgestream.com/corp/demos.htm>. EdgeStream Corporation's plug-in **allows video streaming at DVD and HD resolutions over public internet connections**. Such HD video resolution is in the 1920x1080 range in contrast to Apple Corporation's 640x480 video quality. EdgeStream Corporation's plug-in **also maximizes the customer's experience of the service by selecting the maximum possible and reliable video bit rate** that can be delivered to the customer.

→ Such an EdgeStream Corporation's plug-in enabled set top box (Wyse IPV500) is already in production by [Wyse Corporation](#) using Intel Corporation's chipset.

- [ViewCast](#) Corporation in Dallas is No#1 competitor in the live broadcast market but it is a supplier of real time media encoding cards and [its stock price is currently decreasing](#). Hardware based streaming is more expensive and required specialized cards that need to be replaced as new coding algorithms and streaming technologies come out.

- [Microsoft](#) is among the first who is supporting streaming media, but Microsoft remains a software supplier rather than solution provider. Just like providing the engine of the car does not make you able to sale the car itself.

→ [Related article](#)

- [VitalStream](#) in Irvine California has been recently acquired by Internap Network services corporation in Atlanta Georgia. [Internap's share price](#) is currently decreasing.

- [Amino technologies plc](#), UK The leading IPTV set top box manufacturer. ([Press article](#))

- [Complete list of set top box manufacturers](#)
- [Complete list of service providers](#)
- [Wikipedia IPTV reference](#)

Competitive advantages :

Overall, I think that Apple Corporation is on the frontier of introducing IPTV service to the wider audience. At the same time, Microsoft and ViewCast Corporation's vision could also be turned into an interactive service similar to what [Yahoo! Video](#) thrives to achieve but not yet well known to the public as well as very low quality.

Other corporations such as VitalStream and Amino technologies have a good product and service but probably lack focus/clarity and innovation to bring their service/product to the wider audience like Apple Corporation does.

Clearly, I think that Microsoft and ViewCast are good software and hardware providers for streaming media. It is also unquestionable that a broadcasting company like NBC could conveniently stream its live channels via the internet.

However, live streaming would still need to be turned into an interactive media since passively streaming over the web only extends the broadcasting company's reach but does not alter its options for its customers. Of course, there are online feedback forums on websites but that doesn't compare to an interactive experience comparable to the PCs. Customers also need to be provided a way to access the service conveniently via their TV/home theater system sitting on their sofa rather than in front of their pc.

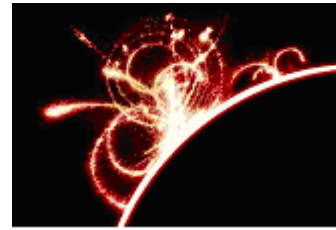
At the same time, [as market research shows](#), people are more in favor of reading news, learning and listening to music. The key point is that why would people use a service that is already available but even better quality and comfortable. So I think that a service that people are actually interested in and is easily accessible via well developed media technologies such as the TV/home theater systems has a higher potential than passive video streams on PCs.

Product

Product line-up :

Form factor

The current size of the Amino Communication's AmiNET130H IPTV set top box's size is 190x134x36mm. I think that it is a realistic size. Simply, the listed ports need enough space to be mounted on the box. Regarding the shape of the box, I think that as simple and



esthetic could be the best choice just like similar products are shaped from Vonage, Motorola, Netgear and Scientific Atlanta.

The functionality of the box is to be an adapter. The box is a connector between the internet, the TV/home theater system and the customer. Optionally, it could also connect a USB drive to upload media/data to the internet or watch/listen to media from the USB drive. It should obviously also provide reliable streaming most. One company that provides high quality streaming plug-in is [EdgeStream](#) Corporation. EdgeStream's plug-in can be used with Microsoft's Windows Media Player and Real Network's Real Player as well as Nullsoft Corporation's Winamp Media Player. The architecture of the box would be just like any other home router or Vonage's phone adaptor. It would include no moving parts and no significant heat emitting part.

Features :

- Ethernet/RJ-45 port for the internet
- SCART/S-video/RCA for the audio/video content
- PS/2 for remote mouse/keyboard, (in case of USB mouse/keyboard, a PS/2-USB converter plug could be used)
- maybe a USB port to be able to connect a USB drive to watch or upload media from it.

The box would obviously need to have the following controller integrated :

- Audio/video
- Network card
- Web server
- I/O

I believe that the above components could be integrated on a single chip just like it is being done in the case of mobile phones.

*I think that video or audio format is not too important since the firmware of the box could be updated even after the purchase just like the router's firmware can be updated easily from the vendor's website. Also, **the audio/video output would always be the same** since SCART/S-video/RCA are analog signals.

The broadcasters of the media stream would be fully responsible for the content. The product provider (company to be formed) would be responsible for the functionality provided on the interactive interface. Just like Google News is not responsible for the content shows on its website since it only **views** content that can be provided by third parties aka news portals. Obviously, copyright details must be clearly discussed with the content provider and action must be taken if the content provider is not satisfied with the viewing/access of its content.

Development roadmap :

If I would be granted support to start a company, I would start out with a well focused, simple and highest ROI product as possible. The simplest form of launching a profitable IPTV product I think, is to do it on the pc and not the TV/home theater system. No box development is required, the product can start out of a web portal and allow advertisers to find their place. The question is of course is, that who would pay for interactive high quality media streaming over the internet ? Advertisers I think. But movies could be viewed too. Blockbuster Corporation's products, for example, could be extended with an online movie rental store. There are [online high quality video demos](#) on EdgeStream Corporation's website already.

As a second stage, an adapter box could either be developed or an existing solution could be used.

Business model

Revenue model :

Most of all, I do not propose to influence customers to be bound by the company's products, standards or practices. My simple aim is to provide a clear shot about value and usefulness. This I think, more than anything is the most important message to deliver to the customer. I think that it is no incident why Apple Corporation has become so popular with its recent products. It is clear that Steve Jobs wants to deliver performance and professionalism.



I think that it is no matter how good your product is if customers and inventors don't see usefulness in it for themselves. So I would like to capitalize on already established business models that can be plugged-in to this business's revenue model. For example, for advertising, I would like to use Google's advertising model and simply extend Google's advertising model to not just the text world on the internet but rich media content that people watch and read every day such as news.

So the primary income of the company would be from advertising on IPTV product using Google's advertising model.

Pricing :

Just like Google customers would personally set their own price for the product. Pay only if you profit from it. Market and product research would obviously needed to be done for determining the exact unit prices for the product. This would also depend on the budget of the company.

Average account size and/or lifetime value :

Unfortunately I could not obtain a single source of information about how many advertising customers Google Corporation have. However, I think that all Google advertising customers could potentially become the customer of the company to be founded. Just like online advertising, IPTV product have no continental boundaries or technological discrepancies. It is expected that the broadband users at home in the United States [will reach 86 million](#) by 2012. [Yahoo! Mail has about 250 million subscribers at present](#) globally. As an estimate I think that about 50 million customers could be signed up for the service in the Unites States alone.

As a lifetime of the accounts, I don't think that there could be a limit for customers to keep using the company's product. I think that a lot of customers have favorite brands nowadays and many offer un-refusable offers such as unlimited email storage space from Yahoo! Corporation.

Sales & distribution model :

Due to the origin of the business, both sales and distribution of the product can be done online, reducing time and money to the minimum.

I would also like to give people opportunity to trade and earn money by referring or reselling our products. I would also try and implement such options to be online to minimize administration. Companies whom are also providing such services are Godaddy Corporation (re-sale) and Vonage Corporation (referrals).

Customer/pipeline list :

Just like in Google Corporation's case, there would be no limit to who signs up for the product. All there is needed is credit card, internet access and a product to advertise or a media content to stream.

Team

Founders & Management :

In the summer of 2002 I came up with the idea to stream online video. I thought of it as a simple and missing product on the market that can be relatively easily implemented considering the already cheap internet access of that time and free streaming tools such as [Nullsoft Corporation's Shoutcast streaming server](#) and Apple Corporation's [Darwin Streaming server](#). Both of them run in a Microsoft Windows environment. I was alone that time and I am alone now too. However, I know quite a few people whom would be interested in participating in building prosperity and success. In 2003,



I met the following people whose interest are enlisted :

→ **Texas Association of Broadcasters**

Oscar A. Rodriguez, Deputy Director

[Texas Association of Broadcasters](#) the largest state broadcast association in the nation, representing 1,100+ radio and television stations. Oscar A. Rodriguez, Deputy Director of TAB offered his support and resources to bring streaming media to the broadcasters of the state of Texas.

□ **Technology Innovation Group**

Dr. Norman Kaderlan, Director

[Technology Innovation Group](#) is a non-profit technology incubator with local and international links and resources to foster technology related business. I have met Dr. Norman Kaderlan at the [International Center of Austin](#). Norman introduced me to the Romanian Business Incubator Delegate and I have given a presentation upon what both parties established a technology synergy for software development. Dr. Norman Kaderlan was also the director of the [IC2 institue in Austin, Texas](#).

□ **WCIT2006 World Conference of Information Technology**

I was on the Technology Committee Board of [WCIT2006](#). There were over 1900 delegates coming to the conference in Austin Texas from 90+ countries. The media exposure was over 300 with over 500 million reader impressions. Being on the Technology Committee Board allowed me to meet with technology leaders of the Austin and Texas area and gain insight to the local technology industry.

Deborah E. Walker,

- **Principal member of Technology Innovation Group**
- **CEO - Deborah E. Walker GmbH, Austria**
- **Technology Innovation Group Inc., USA**
- **IMI-Innovation Management International Ltd, UK**

Deborah E. Walker has been advising the Technology Innovation Group for more than 10 years in the legal and technology area. Deborah has business interests with multi-national companies such as Coca-Cola and has business relations in Central Europe, Austria, England, Beijing China and Austin Texas. Deborah is currently in Vienna, Austria. I met Deborah at the ICA Open house event and during the Romanian Delegate visit.

City of Austin, Media development

Jim Butler

Director of Media development at the City of Austin

The [City of Austin's](#) media development program is currently limited to computer and online games. It is due to the fact that Austin hosts numerous game development companies. Jim Butler is interested in taking Austin's media development further by utilizing streaming media, not to mention the gaming industry of Austin. Jim Butler was brought to my attention by Jim Lebkowsky CEO of Polycot.com and also on the Technology Committee Board of the WCIT2006.

Mary Martinez, Director of Mexico Trade Center

Mary Martinez is the primary person for fostering business relationship between Mexico and Texas. Although I do not propose to provide Internet service in Mexico. I am interested in providing the following services:

- It is possible to host streaming servers in Austin and have clients in Mexico
- P2P applications for businesses are location independent
- Mexico is largely un-utilized market from the Texas business point of view.

Mary has a good relationship with a software company in Torreon, Mexico and invited me to introduce the company by going for a business trip, partially sponsored by the [Mexico Trade Center](#). Mary is also interested in joint co-operation with the Technology Innovation Group.

Greater Austin Hispanic Chamber of Commerce

I was also the member of the [Greater Austin Hispanic Chamber of Commerce](#)(GAHCC). Texas has at least 24% Hispanic population and the GAHCC is among the most active organizations among the Chambers in Austin. GAHCC jointly promote business in Texas with ICA and the Mexico Trade Center. I have got to know Mary Martinez at GAHCC.

Potential business partners that I targeted in 2003 and could be potentially important at present too

→ **Innovative Communication Systems, Grace Trevino**

[ICS](#) is among the leaders in phone service providers in the Texas area. Having 4 locations in 4 major cities of Texas. ICS provides a strong background for business whom are interested in expanding their communication needs beyond voice. ICS also has VoIP enabled technologies for the utilization of dedicated broadband lines.

→ **Bantam Electronics, Clifford M. Scott, President**

[Bantam Electronics](#) is a supplier of Computer equipment, cabling and networking. Bantam Electronics is a Gold Microsoft Certified Partner and Authorized Dell reseller and manufacturer. Bantam electronics also provides technical support and hardware/network implementation and configuration. Clifford is interested in bringing his business customers exclusively in return for using his Business as a primary supplier for us.

Bantam Electronics as an example, I think that it is crucial that once a product is launched, it is supported and having an interest in **at all levels of the business.**

→ Developer of Xtream player, Taco Kampstra,

I first found [Xtream player](#) in 2003 when I wanted to play high quality video streams. Xtream player seemed a high quality well designed free player. I contacted Taco Kampstra and we jointly developed the design/specification a of web based p2p video conferencing plug-in that can be used under IE or IE compatible web browsers. The development cost was 40,000 USD. I tried selling our idea to several businesses in the Texas area such as : [Polycom Corporation](#) in Austin, [SBC Corporation](#) (Merged with ATT Corporation), [Reallinx Corporation](#).

We did not succeed with our product, but I observed that there is a waking up tendency nowadays among Internet companies whom are beginning to use web based chats, Yahoo! Mail for example.

Taco Kampstra and his developers have also been developing high quality video software.

I no longer have Taco Kampstra's contact details but I can find him if necessary.

So I do not know anyone else for sure who would definitely be interested in founding a company with me, I would have to find the right person but I am not afraid of that.

Board of Directors/Board of Advisors :

I do not have advisors. Again, I would have to ask the people I know and met and find the right people elsewhere if necessary.

In general, I formed my ideas based on 2 books that I found very useful in many situations not just in business:

- [The TAO of Leadership from John Heider](#), ISBN: 0893340790
- [Re-Imagine! from Tom Peters](#), ISBN: 07566174

Financials

P&L :

The primary expenditure I am considering is my personal expenditures during the startup period when cash flow could become a concern. I have a girlfriend so until she finds a job, I would need to cater for her too.

Further expenditures :

-Website development, 2000\$ (estimated).

-Website hosting, [4\\$ / month \(Godaddy Corporation\)](#).

-Hardware and software expenditure of the equipment

1000\$ (estimated)

-Taxes, Estimated sales tax in Menlo Park, [California : 8.25%](#).

*Please note that I calculated the above set up expenditures for 1 person as being the minimal possible people in a business. I am obviously preparing the initial plan with the smallest investment possible.

Balance sheet :

I have not yet started the company so I do not have assets, liabilities or equity.

Cash flow :

My personal financial background could not be considered significant regarding the foundation of the business.

I think that on a total expenditure of 4000\$ / month including living expenditures with my girlfriend and business costs, I could take my product onto the market. I think that in about 6 month or less I could start making visible profits.

Cap table :

I do not yet have investors nor a company was founded yet.

The deal :

I have no founding provided yet but I would like to follow Sequoia Capital's business practices and establish a solid background on what both Sequoia Capital and the founded company will be able to benefit.

I presume that there are well established business practices at Sequoia Capital, regarding a startup.

→ For more detail and information on the background of the business proposal and me, please visit the following location :

<http://iptv.konor.org/>

Contact :

Tel : +36 30 572 3976

Email : zoltanp@konor.org

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