

The Video Tsunami Is Coming

Will Your Company Be Ready to Catch the Wave?

... OR ...

Be Buried by the Sea of Change?



100 HillRock LLC

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This Industry White Paper details a hitchhiker's strategic guide inside and through this perfect storm along with a pocket diary depicting a pragmatic path to allow industry wide commercialization and M&A to proceed until the wave arrives.

The phrase *perfect storm* refers to the simultaneous occurrence of three events which, taken individually, would be far less powerful than the result of their chance combination. Such occurrences are rare by their very nature, so that even a slight change in any one event contributing to the perfect storm would lessen its overall impact. In this case we have the spectacular combination of content, distribution network, and pervasive creation and access devices coming together in form and fashion to allow the true emergence of video to the commercial enterprise. You've witnessed similar mass appeal consumer applications like instant messaging (and its little brother text messaging) become viral, real-time business applications. Sure, these little instant communication tools sparked commercial technology transfer and whala - the always connected "are you there" real-time collaboration platforms were borne with full enterprise acceptability as MUST HAVE business applications. Video, shackled by years of technology, distribution, picture clarity and cost barriers is about to reach the perfect storm generating mass consumer appeal. Will your company be ready to catch this digital video wave or be buried in the aftermath of this impending Tsunami?

Many current video thought leaders today will not be the ultimate "video" winners of tomorrow. The new video "Google" is taking shape and its appearance is at the edge of the horizon. The new digital age will generate problems and opportunities for content creation, distribution, and access devices never witnessed prior to this *perfect storm*.

Read how the Internet and consumerization, the act of bringing new products to the consumer marketplace prior to industry and enterprise adoption, will foreshadow and accelerate inevitable business change.

Target Audience: Investment Bankers, Hedge Fund Managers, Financial Institutions, C Level Corporate Executives, Business Development, Strategic Company Direction, Technologists, Content Creators, Content Aggregators, Content Providers, Network Distribution, Networking Companies, QoS and QoE Equipment Providers, IPTV, ITV, Media Cache Farms, Network Groomers, Packet and Performance Optimization, Network Management, Access Device Manufacturers, LCD Manufacturers, Camcorders, Video Conferencing Equipment Providers, Telepresence Solution Providers, Video Search Engines, Video Gaming, Video Collaboration, Real-Time Collaboration, Instant Messaging.

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Executive Summary

Key Paper Highlights

- **Content**
 - Short form video will become ...
 - Hybrid Content Formats Demonstrate....
 - Internet video traffic will be
 - High Definition content will
 - Video Content Search will ...
 - Ad Revenue shifts to
- **Distribution Network**
 - Internet TV will
 - Consumerization will
 - WiMax stands to break
 - QoS and QoE vendors will
- **Access Devices**
 - Personal Computer and Digital Television will
 - Low cost high function collaboration devices will
- **Applications**
 - Video Conferencing and Video Enterprise Communications will
 - WiMax will usher in
 - Set top boxes finally ...
 - Telepresence (HD Video) will create....
 - Collaboration takes steroids from

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The phrase *perfect storm* refers to the simultaneous occurrence of three natural events which, taken individually, would be far less powerful than the result of their chance timely combination. Such perfect timing is rare by their very nature, so that even a slight change in any one event contributing to the perfect storm would lessen its overall impact. In this case, we have the spectacular combination of content, distribution network, and low cost personal video creation and access devices coming together in form and fashion to allow the true emergence of video to the commercial enterprise. You've witnessed similar mass appeal consumer applications like instant messaging (and its little brother text messaging) become viral, real-time business applications. Sure, these little instant communication tools sparked commercial technology transfer and whala - the always connected "are you there" real-time collaboration platforms were borne with full enterprise acceptability as MUST HAVE business applications. Video, shackled by years of technology, distribution, picture clarity and cost barriers is about to reach the perfect storm generating mass consumer appeal. Will

your company be ready to catch this digital video wave or be buried in the aftermath of this impending Tsunami?

At the January 2008 Computer Electronics Show Cisco's CEO, John Chambers, recently said, "Video is the next killer app" and earlier at the December 2007 Cisco C-Scape Conference he reported that 25% of all Internet traffic is now video. Led by the emergence of YouTube's success, the new video Googles are taking shape and making their appearance at the edge of the horizon. Many of these new winners are not the current video leaders of today. Rather, the new digital age is creating opportunities for content creation, distribution, and network management never before witnessed. Today's digital video represents a new commercial medium that demands quality service delivery over a variety of open and proprietary distribution networks as diverse as the end user display devices they service. The new faces of content, distribution networks, and end user devices are transitioning video content from a one size fits all 4x3 television format to a multiplicity of form factors for the living room to the boardroom.

Recreational video stands to quickly rival production quality offerings as new content formats ranging from high definition broadcasts to amateur led short form video are popularized. These new mixes of content have variable production quality that is "good enough" and could well be the harbinger of the changing face of new media entertainment. It is clear that Internet television sites like Joost are embracing this new media and are ushering in new business models and pulling ad revenue like a vacuum from traditional media.

Distribution network providers have entered an identity business crisis as cable entertainment providers look to offer telecommunications and business data services. Telecommunication providers believe their pipes should carry digital entertainment bits as well as voice and data. Wireless networks are ready to provide mega/gigabit broadband last mile loops that are high bandwidth to the door. A new set of Entertainment delivery devices are emerging with processing power capable of receiving, transmitting, or transporting a wide variety of video formats. The new generation of Smartphones has made work possible anytime and anywhere, but new video tools will make the time spent more productive.

Many new applications will ride the wave. The phenomenon of social networking is growing as the popularity of connecting people in every walk of life transcends age and ethnicity. Consumer video socialization stands to reunite families and friends by Christmas 2009 through the introduction of new consumer friendly devices and application services.

Apart from modulation and protocol transformations across the network, all digital medium (bandwidth) is bits and bytes which will be eventually metered like water and electricity.

In 1979, the new wave music classic hit by the British group the Buggles, "Video Killed the Radio Star", foretold a retrospective look at the dying of Radio as an important medium upon which many celebrity stars were born. This was the inaugural music video that was played on MTV when it was launched in 1981. The song ironically describes how a singer's career is cut short by the explosion of television. As we approach thirty years hence the songs writing, we might wonder about the fate of classic TV and whether the face of information and entertainment is ripe for a new change. This change will be levied by the

perfect storm of High-Definition content and short form video, distribution networks that perform as flawlessly in the first mile as they do the last mile and the proliferation of low cost high function media access devices that truly enable anytime, anywhere collaboration. *Will the Internet Kill the Television Star?* Will it happen in the next 3-5 years? Will it be less?

In this paper, we identify, discuss, and give a forward view of several new trends and opportunities that are emerging as video rapidly moves into the business and consumer worlds. The notion of rapid “consumerization” has never been stronger in the enterprise.

About The Authors

Ken Kalinoski

Founder of 100 Hill Rock Technology, Ken has been providing Technology Due Diligence, Strategic Development, Technology Transfer and Interim Management to small and medium size Companies, Capital Investment Bankers and Hedge Fund Managers seeking to expand their products and services. The company often works with private and public companies as well as universities looking for help in the commercialization of research and innovations. Ken's video experience dates back to the first Video on Demand trial with Hong Kong Telecom in the early 1990's. Video has been a passion and focus ever since.

Ken has held executive positions in R&D, Executive Management, Business Management and Development at a number of Fortune 500 and Startup companies.

Ken mostly served as VP of Engineering at Polycom where he delivered the company's first High-Definition Video Conferencing systems.

He was Startup Company Founder and Vice President of Hardware and Software Engineering for Netpliance. A company IPO'd in 12 months and delivered 1st Mover Internet Appliance product and service offering in 9 months. The company was acquired by 3Com.

Ken's Video Conferencing background includes CTO at VTEL/Forgent Networks where he led the \$100M patent portfolio strategy and M&A and drove the strategy and direction to create the first heterogeneous Video Network Management Platform. The business was later sold to Tandberg.

Ken had numerous assignments in his 18 year career at IBM including HQ assignments and delivery of IBM's first High Availability Cluster Multi-Processor (HACMP) Fault Tolerant System, IBM's Broadcast Media Streamer, Digital Ad/Spot Insertion System, Video on Demand System, and VideoCharger the Streaming Audio and Video over the Internet system..

Ken holds a BS degree in Computer Science and a MS degree in Computer Engineering

Kirk Norsworthy

A veteran of nearly 30 years in technology, Kirk mostly recently served as VP of Engineering at Polycom where he worked with Ken in delivering the company's first High-Definition Video Conferencing systems and was responsible for the Program Management, Product Test, Project Office and Customer Support.

Prior to Polycom, Kirk worked as an executive at startup ClearCube Technology, the industry leader in PC blade servers. He managed the Architecture, R&D teams and the off-shore development.

Kirk worked with Ken at VTEL/Forgent Networks in delivering the leading Video Network Management platform. The Alliance Suite was awarded the Lotus Advisor Magazine's - Editor's Silver Choice Award for Business Application and the prestigious award from Frost & Sullivan, The Market Engineering Award for Technology Innovation, recognizing the successful development and introduction of a new technology that makes a significant contribution to the engineering industry.

At Vignette, Kirk was responsible for all the development of Vignette's flagship StoryServer Version 5 and the follow-on V/5 Platform – the leading content management software platform supporting customers such as Bank One/Chase, Barclays, CBS and other high volume websites. He directed the Internationalization of the product, new User Interface and product integration and testing on both NT and Solaris server platforms.

Kirk spent 21 years at IBM, where he held numerous R&D, Product Planning and Project Office assignments in RS6000, PC and Power PC hardware and software. He delivered AIX as the Program Manager and spent several years providing technical assessments and product reviews for IBM Corporate HQ.

Kirk holds a BS in Journalism and a MS in Computer Science.

Appendix A: Companies Named in Document

Alcatel-Lucent. www.alcatel-lucent.com
Amazon. www.amazon.com
American Broadcasting Corp. www.abc.com
AMD. www.amd.com
Akamai. www.akamai.com
America Online. www.aol.com
Apple. www.apple.com
AT&T. www.att.com
Audio Visual Integration. www.avi.com
AVID. www.avid.com
Babelgum. www.babelgum.com
Bit Gravity. www.bitgravity.com
Bit Torrent. www.bittorrent.com
Blizzard Entertainment. www.blizzard.com
Blue Coat. www.bluecoat.com
Brix Networks. www.brixnet.com
Broadcom. www.broadcom.com
Cachelogic. www.cachelogic.com
Catapult Communications. www.catapult.com
CBS. www.cbs.com
Charter Communications. www.charter.com
Cisco Systems. www.cisco.com
Coca Cola Company. www.coca-cola.com
Codian. www.codian.com
Comcast. www.comcast.com
Compete Inc. www.compete.com
Corning. www.corning.com
Cox Communications. www.cox.com
Creative Technology. www.creative.com
Dan Rayburn Online. www.danrayburn.com
DirecTV. www.directv.com
Disney Company. www.disney.com
EchoStar Communications. www.echostar.com
Edgecast Networks. www.edgecast.com
Eduventures. www.eduventures.com
Facebook. www.facebook.com
Gartner Research. www.gartner.com
Geico. www.geico.com
Google. www.google.com
Hewlett Packard. www.hp.com
Hong Kong Telecom. www.pccw.com
Hughes Network. www.hughes.com
IBM. www.ibm.com
IneoQuest. www.ineoquest.com

Inktomi. www.inktomi.com
Intel. www.intel.com
Internap. www.internap.com
Interworking Labs. www.iwl.com
JDSU. www.jdsu.com
Joost. www.joost.com
Juniper Networks. www.juniper.net
Kazaa. www.kazaa.com
KVH. www.kvh.com
LifeSize Communications. www.lifesize.com
Limelight Networks. www.limelightnetworks.com
Limewire. www.limewire.com
Media Publisher. www.mediapublisher.com
MGM. www.mgm.com
Microsoft. www.microsoft.com
Microvision. www.microvision.com
MobiTV. www.mobitv.com
Mozilla. www.mozilla.com
MySpace. www.myspace.com
M2Z Networks. www.m2znetworks.com
NBC Universal. www.nbcuni.com
News Corp/Fox. www.newscorp.com
Nike. www.nike.com
Nortel www.nortel.com
Overlay.TV. www.overlay.tv
Paramount Pictures. www.paramount.com
Packet Design. www.packetdesign.com
Packet Storm Communications. www.packetstorm.com
Phillips Electronics. www.phillips.com
Pixelmetrics. www.pixelmetrics.com
Polycom Communications. www.polycom.com
Psytechnics. www.psytechnics.com
Qwest Communications. www.qwest.com
Revision3. www.revision3.com
Ripcode. www.ripcode.com
Sanjole. www.sanjole.com
Scientific Atlanta. www.scientificatlanta.com
SGI. www.sgi.com
Siemens. www.siemens.com
SightSpeed. www.sightspeed.com
Skype. www.skype.com
Sling Media. www.slingmedia.com
Sony Pictures. www.sonypictures.com
Sprint Communications. www.sprint.com
SPL Integrated Solutions. www.spl.com
Symmetricom. www.symmetricom.com
Tandberg. www.tandberg.com
Tektronix. www.tektronix.com

Telchemy. www.telchemy.com
Texas Instruments. www.ti.com
Time Warner Communications. www.timewarner.com
Tollgrade Communications. www.tollgrade.com
Twango. www.twango.com
Velocix. www.velocix.com
Versión Communications. www.verizon.com
Viacom. www.viacom.com
Vialta. www.vialta.com
VSGI. www.vsgi.com
Volicon. www.volicon.com
Warner Brothers. www.warnerbrothers.com
XstreamHD. www.xstreamHD.com
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3Com/Huawai. www.3com.com