INTERNATIONAL CONFERENCE ON INTELLECTUAL PROPERTY, THE INTERNET, ELECTRONIC COMMERCE AND TRADITIONAL KNOWLEDGE

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under the auspices of
His Excellency Mr. Petar Stoyanov, President of the Republic of Bulgaria

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INTELLECTUAL PROPERTY, THE INTERNET AND ELECTRONIC COMMERCE
INTERNET TRENDS: ROLE OF THE INTERNET
IN THE DEVELOPMENT, MANAGEMENT AND COMMERCIALIZATION OF INTELLECTUAL PROPERTY

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INTRODUCTION

1. I would first like to thank His Excellency Mr. Petar Stoyanov, the World Intellectual Property Organization and its Director General, Dr. Kamill Idris, and the National Intellectual Property Association of Bulgaria, for inviting me to speak to you today on Intellectual Property, the Internet and Electronic Commerce.

2. We are living in an exciting time with regard to intellectual property. The Internet has emerged as an industrial revolution of sorts, on both the technology and policy-making front at the same time. Paradoxically, the Internet was created as a communication tool for government and industry, in response to policy, but has emerged as a global medium which now drives global economic development and policy-making.

3. On one hand, the Internet has spawned new and emerging industries related to conducting business on an international scale, having extended the reach and depth of technology and business data acquisition. Yet, at the same time, it has created opportunities and counter-balancing liabilities related to the disciplines of intellectual property development, enforcement and commercialization.

4. Business method patents relating to the Internet have become a new business frontier, and they have caused reactionary policymaking around the world. Yet it is the Internet itself that has been the genesis of so many business method patents.

5. So too has the Internet introduced new trademark and branding opportunities for conducting business globally, yet it simultaneously created a new front of trademark and domain name infringement and enforcement that routinely traverses territorial boundaries. Companies that only intended to conduct business on a regional basis are thrown unsuspectingly into an international intellectual property game the minute they launch their small company website.

6. Not since the late 1700s when Eli Whitney’s milling machine became the tool that propagated countless inventions and a new industrial economy has an invention such as the Internet so inspired invention, business development and policy. Yet in 1804 Whitney, after receiving his patent\(^1\) only to wind up embroiled in ten years of legal battles, never filed another patent, stating that “An invention can be so valuable as to be worthless to the inventor.”

7. The Internet is a powerful tool that has already demonstrated its ability to create new jobs, advance technology, shorten product life cycles, circumvent international communications barriers, and transcend political and social chasms.

8. Yet at the same time, it has become a tool that has caused the devaluation of some intellectual property almost as much as it has created new value for others. It has caused confusion amongst leading policy-makers, and while it has created new business opportunities, it has itself threatening to become an impediment to future economic expansion. Without proper management, the Internet will become ‘worthless to the intellectual property community’.

\(^1\) Eli Whitney, United States Patent Number: 72X, Cotton Gin, March 14, 1794.
9. Understanding the historical impacts of the Internet upon intellectual property as a whole, and being able to anticipate technology, IT, work flow and the future impacts the Internet may have upon policy, technology, work flow management and intellectual property value creation is critical if informed, sensible standardization, information technology management, operations budgets and intellectual asset development and commercialization are to reach its potential. Without properly managing operations to anticipate and meet the new metrics brought about by the Internet, one’s seat at the table of intellectual property prosperity may be lost for generations.

BENEFICIAL IMPACTS OF THE INTERNET ON INTELLECTUAL PROPERTY

10. The Internet has driven many changes in the intellectual property community. As a data and resource access tool, the Internet has expanded the reach of every user from localized, regional resources, to true global information access.

11. Correspondingly, the Internet has been the genesis of many new support industries. Because of its low cost of access, it has allowed inventors, companies and governments not otherwise able to compete with big-budget enterprises to leap-frog traditional growth curves, thereby affording an opportunity to implement leading-edge information gathering, IP analysis and Intellectual Asset Management (IAM) tools.

12. A short list of the benefits the Internet has substantially, or single-handedly brought to the intellectual property community is impressive:

- increased Affordable Access to intellectual property resources, globally;
- challenged the world to increase standards of ‘Patent Quality’. The ability to find invalidating prior art via the Internet retroactively calls into focus the quality or validity of previously issued patents (versus, the respected Mr. Joseph N. Hosteny of Niro, Scavone in a recent article “Fourth, Don’t File a Patent” has suggested that property holders consider trade secrets as opposed to patents for intellectual property protection as more patents are surfacing as invalid or unenforceable2);
- increased business, political and society awareness of the growing importance of all types of intellectual property;
- shortened data access time: days or weeks have been shortened to minutes or hours;
- geometric increase in the amount of accessible data and collections relative to IP;
- provided access to an expanding number of Web-based software and IP management tools;
- reducing reliance on third party data providers (reducing cost, increasing access speed);
- provided path for developing countries to catch up to world developments with regard to IP data access, management and data access;
- increased ability of government agencies to deliver resources to a larger number of their citizens;

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spawned new industries and technology segments (online IP management tools, monitoring software, technology exchanges, new patent classifications and increased business for legal sector, accelerated time to market for new products and technologies).

DETRIMENTAL IMPACTS OF THE INTERNET ON INTELLECTUAL PROPERTY

13. Notwithstanding the positive impact the Internet has had on the intellectual property community, it has simultaneously created an alarming list of shortcomings. Although we can accept the benefits with complacency, we cannot allow the detrimental impacts to continue unchecked. The first step to problem resolution is problem identification. This list of Internet-related shortcomings or detrimental impacts does not follow any priority schedule; the priorities will differ based on country, objectives, operations, budget and available resources:

- increased demands to become Internet proficient/Internet literate, or lose competitive positioning (to varying degrees, this ‘self-improvement’ dictum impacts inventors, IP practitioners, corporate managers, and government agencies);
- increased complexity of distilling relevant content from the billions of available web pages. The amount of available data has outpaced our ability to efficiently extract meaningful citations;
- increased cost associated with obtaining highly relevant data of information.\(^3\) The economic efficiencies of obtaining relevant data are declining since data volume is increasing faster than search technology;
- promotes a higher standard of practice with regard to prior art searching by practitioners. Although seemingly a benefit, the impact is an increase in the cost of client legal services attributable to the increased time practitioners must research the expanding universe of prior art data;
- exacerbated the “poor patent quality”; provides means to discover invalidating art. This negatively impacts shareholder / stakeholder value, intellectual property value, and overall economy;
- increased demands on Patent Office Examiners to expand prior art search. Examiners must search not only the “field in which the invention is classified, but also analogous arts.”\(^4\) This impact (a) increases pendency, (b) decreases time available to prosecute any particular patent, and (c) decreases overall citation quality and intellectual property validity. These are global phenomenon that affect every patent office;
- has spawned new intellectual property problems, infringement possibilities and enforcement challenges (Napster, Cybersquatting / cyber-slandering, trademark infringement);
- created an ancillary industry in data analysis tools that are still primitive; the tools can deliver a false sense of confidence in their ability to search through, and parse applicable or relevant data and prior art citations;

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\(^3\) Using the Internet for non-patent prior art searches Derwent IP Matters, July 2000. www.ipmatters.net/features/000707_gibbs.html.

\(^4\) Manual of Patent Examining Procedure §904.01(c).
• increased costs and accelerated implementation of next-generation patent database and IT infrastructure (USPTO, EPO, IPO, other gov’t. patent offices). The unexpected increase in users, combined with the need to automate Web-based systems have escalated costs and accelerated timetables. Reactive solutions are proving to be short-lived, and will need to be scrapped when appropriate systems are developed;

• increase in the amount of lost prior art. Many fledgling companies have filed software or business method patents, but many businesses have not, or will not survive the pendency of their applications. Many thousands of otherwise valuable prior art citations will go abandoned, ultimately being lost. This opens the door for subsequent, less deserving ‘inventors’ to obtain patents on previously filed inventions. Correspondingly, the validity of such issued patents can later be challenged by the earlier inventors who present non-patent citations used in the original, but abandoned patents;

• increased demands on database and content providers to serve expanding market. This forces expensive hardware / software infrastructure expansion.

14. What the Internet has NOT done with regard to intellectual property development:

• has failed to live up to a expectations as a technology transfer marketplace;

• has failed to bridge the chasm between industry and intellectual property creators: has not significantly increased the adoption of IP by companies (has not streamlined the process of IP commercialization)

STATE OF THE ART: INTERNET WITH RESPECT TO INTELLECTUAL PROPERTY

15. Recognizing the limitations and shortcomings of the Internet’s role with respect to intellectual property, one can begin to craft an Internet-reliant IP management program that maximizes the beneficial attributes while circumventing the now obvious limitations.

16. The number of patent applications continues to increase worldwide, with 12%/yr (USPTO), and EPO running at a rate of increase of 24%/yr. Trademark applications increasing in like manner.

17. Correspondingly, use of the Internet is increasing, with users expecting access to the growing amount of data available via the Internet.

18. 300 million users hit 850,000 active, purposeful websites in 1999, with a total number of sites hitting the 53 million mark.5 Contrast this with the total of 5.8 million users hitting 100,000 websites in 1995.6 Today there are more than 2.7 billion publicly available indexable pages and another 5 million added daily7, growing faster than the search and analysis tools can respond.

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5 Dunn and Bradstreet, Domain Stats; [www.emarketer.com, 2000].
6 Reported by Business Wire, 1996.
7 Argus Insights, Durango, Colorado, USA [www.argus.com].
19. The universe of useful and active intellectual property websites stands at about 35,000, with about 1,000 being updated monthly or more frequently. A significantly higher number of sites include references to various intellectual property, digital rights, law, policy or technology, or data that is of interest to intellectual property practitioners.

20. Suffice to say, the growth of Internet resources and users is growing at an accelerating rate, and there is no reason to assume that this trend will not continue, especially as emerging countries become fully Internet enabled. Websites must respond with appropriate content to serve these rising demands now, and into the future (chart - next page).

21. The challenge of Intellectual Property Information Management continues to drive the development of search and analysis tools capable of distilling relevant information from the expanding sea of information and data available on the Internet, although the current state of the art of searching and analytical tools for the intellectual property community remains quite primitive.

22. Although there are currently only a handful of suppliers of Web-based IP search and analysis tools\(^8\), software developers continue to make strides in the development of data management tools however, hopefully at a rate that will allow convergence with the growing data resources.

23. Increasing the level of quality of patents remains one of the highest goals of patent offices from every country. Efforts towards Internet-based universal filing, search and prior art citation access systems continue. But, even with harmonization of 75% of the World’s

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- Aurigin: http://www.aurigin.com/corproot.htm
- Wisdomain: http://www.wisdomain.com/index.htm
patent offices, there will continue to be a substantial amount of relevant prior art data that will remain unincorporated into any standardized system for quite some time. Therefore, harmonization efforts will not obviate the requirement for sophisticated tools, policies and rights of access needed to evaluate the millions of non-patent art citations remaining outside of any standardized data management system.

24. Increased pendency will also remain a concern to the world intellectual property community. Patent pendency at the USPTO since 1998 shows a negative trend from 19 months, expanding to 24 months. Given the current policy and budgeting, US “patent pendency to issue/abandonment will climb to 38.6 months by FY 2006”\(^9\). Although Japan is making strides to reduce its pendency (38 months in 1996, now approaching the 28 month mark), it continues as one of the longest pendency periods of developed countries.

25. The Internet has so far failed to perform as a tool to facilitate intellectual property commercialization although there are nearly 75 websites dedicated to promoting technology transfer\(^10\). Of the more than 35,000 technologies estimated to be listed and currently available for licensing or transfer, the number of completed transactions attributable to the Internet marginally hit the low hundreds, even after nearly a decade of online promotion. More than $250,000,000 in venture investment has gone into websites dedicated to technology transfer and invention commercialization.

26. It is my assertion that within the next few years, the ‘Intellectual Property Internet’ will evolve into an International Trade Network built upon a global intellectual property backbone, with an increased emphasis put on trade rather than intellectual property, following the time-proven axiom that intellectual property protection is only valuable if it is responsive to market and commercialization opportunities. Intellectual property, and IP protection means are themselves of little value without first claiming market opportunity or commercial value. Typically, IP does not create new markets, but remains responsive to them.

27. In response to the growth of Internet use related to intellectual property, costs\(^11\) to create and maintain websites will continue to increase. Major commercial intellectual property websites have been built at an average cost in the USD$1 million range. With the increasing demands for depth of content, website high-speed performance, high traffic (bandwidth) and multi-lingual support, new websites must budget significantly more for the construction and maintenance of the next generation of intellectual property sites.

28. Government patent and trademark offices have an even more costly and time-consuming task. That is, not only is there a growing requirement to construct meaningful information resources for its citizens, it must begin to automate the application filing, prosecution and publication of patents and trademarks by creating the e-commerce interface that will serve the growing customer demands.

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\(^10\) Argus Insights, Durango, Colorado, USA [www.argus.com].

\(^11\) Website Creation; Facilitating Invention Development and Commercialization via the Internet, HKPC Nov 2000 [www.CafeZine.com].
29. More importantly, we are already seeing the negative impact on increased Internet-related traffic and sophistication and explosive growth of patent applications in various technology sectors on internal patent and trademark operations. The growth rate of intellectual property creation and applications filed, coupled with the piecemeal approach to e-commerce and customer service automation systems has caused a significant overload on Work Flow Processes within the world patent offices. Increased demands to use the Internet to search for prior art have out-paced the ability to efficiently and confidently search the world or prior art.

<table>
<thead>
<tr>
<th>IP Website Characterization Chart</th>
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<tbody>
<tr>
<td>Type of Website</td>
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<tr>
<td>Local Organization</td>
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<tr>
<td>Regional IP Organization</td>
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<tr>
<td>National Inventor Organization</td>
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<tr>
<td>Commercial Product or Service Provider</td>
</tr>
<tr>
<td>Government Resource Site</td>
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<tr>
<td>International Organization</td>
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<tr>
<td>Internet IP Portal</td>
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</table>

30. The unexpected commercial development of the Internet, combined with the explosive Internet user base and increasing emphasis on intellectual property protection by industry has been responsible for the creation of the rough landscape of Internet-based resources.

31. A decade after the first wave, Internet is beginning to mature. We must now take stock of the opportunities, costs, liabilities and economic benefits of global, Internet-based, intellectual property and IT systems, and develop a plan to manage them profitably, and wisely.

32. The chart (above) broadly outlines the variety and types of Internet sites related to intellectual property. Nearly every IP website falls within one of these classifications.
INTERNET RESOURCES RELATED TO INTELLECTUAL PROPERTY

33. Website categories for IP information, web-based tools and database access:

- **Databases:**
  - Patent Databases (Government & Commercial)
  - Trademarks (Government & Commercial)
  - Non-Patent Art (Government, Educational & Commercial Research)
    - Scientific / Research
    - Chemical
    - Technology/Materials
    - Bio & Life Sciences
    - University Thesis & Research Studies
    - Technology Disclosure Publications
- **Domain Registries:** TLDs/ccTLDs (240 ccTLDs, com, net, gov, edu, org)

- **Information and Directory Resources** (includes IP development, law, protection, enforcement, commercialization references, information, services and products)
  - Patent Resources
  - Trademark Sites
  - Copyright Sites
  - Management Tools
  - Specialized Search Engines
  - Patent & Trademark Search Tools
  - Technology Transfer (University, Non-Profit, Exchanges, Auctions)

- **Primary language of Web-based IP resources** (PatentCafe research, 2001)
  - English: 78% (Declining as percent of total from 92% in 1995)
  - Spanish: 4%
  - French: 6%
  - (Cyrillic): 2%
  - German: 4%
  - Asian (various): 4%
  - Indian: 1%
  - Other: 1%
  - Total: 100%

- **Internet Directory to many Websites contained in the above categories** [English]:
  http://www.patentcafe.com/directory/directory.asp

Additional references:

Bush’s Proposed 2002 Budget Slashes USPTO Funding
NameProtect, PatentCafe Magazine, April 2001
www.cafezine.com/news_template.asp?id=509&deptID=8
CONCLUSION: ANTICIPATING INTERNET TRENDS TO MANAGE INTELLECTUAL PROPERTY

34. The Internet is a new medium that demands planning, attention and integration.

(a) Business: The corporate community must embrace the Internet as a means to compete in a global marketplace, and must develop an awareness of the potential benefits and impacts on a global basis regardless of its regional strategy, operations and decisions. The increased commercial and IP protection opportunities must be balanced with an inadvertent increase in exposure to infringement claims, increased requirements and costs to assert IP ownership globally, and the higher standard of practice in prior art citation, and prior art clearance.

(b) It’s incumbent upon every growing company to develop an economic and business strategy associated with patents, trademarks and branding, copyrights, and defensive and offensive intellectual property. Typically, this calls for the creation of an intellectual property manager or specialist who’s job it is to become educated with regard to the fast-moving landscape of IP on the Internet.

(c) Government & Policy Makers: Plan on a continually increasing rise in the number of patent and trademark applications, and understand the financial and operational impact of accelerating intellectual property activity.
(d) Without implementing the next generation information technology (IT) infrastructure, in a few short years most patent offices will be faced with an almost impossible task of managing an out-of-control traditional paper-based system. It’s imperative that a long range plan be developed, and that a budget commitment be obtained to ensure the vitality of their patent systems, and to maintain the requisite quality standards in light of the burgeoning volumes of prior art data.

(e) Without implementing a 3-5 year budget plan to develop automated intellectual property database, search, analysis and work flow management systems, patent offices will be unable to catch up to the demands without an extraordinary allocation of personnel and money.

(f) It’s also important to provide for a staff position that is dedicated to the harmonization of your patent systems with emerging standards, insofar as it is practical, possible, and within long range budgets.

35. You’ll note from the chart (above) the relationship between the frequency of website update and operations costs. Keep these costs in mind when developing your IT strategy, as too often the incredible costs of maintenance are overlooked in the budgeting process.

36. It is recommended that the majority of budget and effort be put on exclusive content. Since there are many websites which continually monitor the Internet for IP related resources, and keep their hypertext links current and active, it is a poor use of budget dollars to develop one’s own directory of Internet resources. Without frequent updating, this section will become dated, even out of date, and will likely contain broken links when linked Websites change their Web address.
PatentCafe.com, Inc. Internet Web Properties

http://www.CafeZine.com  The Leading Invention Magazine Online
http://www.CafeForums.com  Invention Community; Chat and Boards
http://www.IPSearchEngine.com  Web-based IP Management Software
http://www.IPBookStore.com  Books and Essential Gear for Inventing

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[Annex follows]
INTERNET TRENDS:
ROLE OF THE INTERNET IN THE DEVELOPMENT, MANAGEMENT
AND COMMERCIALIZATION OF INTELLECTUAL PROPERTY

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International Conference On Intellectual Property, The Internet,
Electronic Commerce And Traditional Knowledge

Sofia, Bulgaria

May 29 - May 31, 2001
Role of the Internet on Intellectual Property

ALMOST 10 YEARS OF RAPID INTERNET EXPANSION

- Unplanned Impact on IP
- Created Many Benefits
- Brought New Problems

- Look at Recent History
- Lessons We Learned
- Planning for the Future
Role of the Internet on Intellectual Property

INTERNET TRENDS

BENEFICIAL IMPACTS ON INTELLECTUAL PROPERTY

- Affordable, Global Access to IP Resources
- Evolved Standards for Higher Patent Quality
- Increased Awareness of Patents, Trademarks, Copyrights
- Expanded Global Access to Intellectual Property Data
- Created Internet Access to IP Management Tools
- Developing Countries Catching Up to World IP Leaders
- Government Agencies Serving Their Citizens Better
- Spawned New Industries and Technology Segments
DETRIMENTAL IMPACTS ON INTELLECTUAL PROPERTY:

- Internet Access and Educational Demands (Time & Money)
- Difficulty and Cost of Finding Highly Relevant Data
- More Litigation & Legal Costs: Impacts Small IP Owner
- More Prior Art Challenges to Issued Patent Validity
- Demands on Patent Examiners: Better Searching
- Increased Patent Office Costs: Computer Infrastructure
- Inadequate International IP Policies & Laws
- New Online Software Tools Promote False Confidence
INTERNET SHORTCOMINGS VS. EXPECTATIONS:

- Has Not Emerged as an Online Marketplace for Technology Transfer or Licensing
- Has Not Appreciably Changed Industry Attitudes Towards Acquisition of IP, or Technology Commercialization
- Has Created a “Digital Divide” Between Leading and Emerging Economies in a Global Internet Environment
Role of the Internet on Intellectual Property

INTERNET TRENDS

INTERNET STATE-OF-THE-ART

- 5,000,000 Indexible Pages Added Daily - Growing Faster Than Online Search Capability
- 35,000 Web Sites With Searchable IP Data Resources
- Maturing Online Tools for Data Mining, Patent Analysis, and Researching Prior Art
- $1,000,000 (USD) Commercial Web Site Development
- Emerging Web-based IP Management Software
- Digital IP Protection and Infringement Monitoring Solutions
- Web Sites Use Technology Not Accessible By Users of Older Computers [Java Script, Flash, Large Graphic Files]
Role of the Internet on Intellectual Property

ANTICIPATING INTERNET TRENDS: BUSINESS

- IP/IT Specialist: Track Web Tools, Databases, Technology
- Establish New Company IP Policy:
  - E-mail and Digital Rights Management Policy
  - Patents, Trademarks, Copyrights, Online Brands
  - Domain Management / Server Security
  - Monitoring: Competitors / Infringers
  - Trade Secret Espionage: Security Firewalls & Audits
- Education on Efficient Use of Internet for Intellectual Property Searching and Intellectual Asset Management
3-5 Year Budget Plan for Patent Office Automation:

- $10 -100 Million (USD) Total 3 Year Costs: 2002-2004
- Don’t Invest in Content Duplication if Available Elsewhere
- Implement Most Advanced System: Delay Obsolescence
- Staff: Internet Technologists and IT Specialists
- Design System for Lowest Level Technology Access by Internet Users (Older computers, Slow Internet Access)
International Standards for Internet-related IP Issues

- Recognize International Intellectual Property Rights
- Promote Exploitation and Commercialization
- Countries Comply With National Policy
- While Protecting the Rights of its Citizens

CHALLENGE TO THE WORLD IP COMMUNITY
INTERNET FOSTERS A GLOBAL IP COMMUNITY

- Blagodaria
- Dankeschoen
- Dankie
- Koszonom
- Merc
- Wado
- Thank You