

United States Federal Trade Commission

“The Evolving IP Marketplace”

Hearings on The Operation of IP Markets

March 18, 2009

Prepared Statement of

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Good morning. I thank the Commission for inviting me to speak at these hearings on a subject that is of paramount importance to innovation in America. My perspective is that of an inventor, an entrepreneur and an independent scholar of the patent system. Today, in response to one of the advance questions propounded by FTC staff, I will speak briefly about my experience in building the patent portfolio of Broadband Innovations (BI). BI is the previous company I founded, which was acquired by Motorola three years ago. However, I will address this development history in the context of contrasting it with that which could have ensued, had the First-To-File (FTF) patent system been the law of the land. I thought it important to explore this alternative hypothetical scenario because by the publication date of the Commission’s report from these proceedings, I fear that the proposed FTF legislation amending 35 U.S.C §102 will have been enacted.

The chronology of patent applications at BI is shown in Slide 4, wherein the numbers and suffixes represent the patent application docket numbers and their types. Several inventions including supporting technologies required to make the core products workable were conceived earlier than the corresponding application dates. After further developments, only the successful inventive solutions were disclosed and filed in the patent applications shown. The Broadband

Decoder core product was technically successful but had not received sufficiently wide market acceptance by cable TV companies to justify the large manufacturing investments necessary to make the customer premise equipment (CPE) devices. Therefore, the company had to change direction and focus on head-end products that relied on different aspects of the original invention. Thus, further continuations were filed to claim those disclosed features that were not claimed originally. BI's successful transition to making and selling head-end RF transmission products with patent protection could not have been possible without extensive use of continuation patent applications.¹

BI would have filed many more patent applications under the hypothetical scenario of a 'First-To-File' patent system (colored dots, Slide 5). Each such application would have been filed upon conception of an inventive possible solution prior to fully vetting and testing such solution. This is because under FTF, documented conception and diligence in reduction to practice would not have established an invention priority date. Rather, the actual filing date of a patent application would have been the priority determinant. Because reduction to practice, experimentation and vetting can take many months or even a couple of years, BI could not have risked such loss of patent priority and would have had to file more applications in the course of development.

Contrary to some popular beliefs, "a flash of genius" is by no means sufficient. Developing an invention and finding solutions that are optimally adapted to embody the invention, often take a considerable amount of time, experimentation and trials. This has not been unique to BI and had been the experience of many other innovating companies. For example, Slide 6 depicts the experience of my friend inventor Steve Perlman at Rearden.² Had FTF been in place during that time, Rearden would have had to file more than 50 patent applications during the 5-year development period, instead of the six applications that were actually filed in connection with this technology. Thus, under current efficient First-To-Invent (FTI) system, months and years can pass from conception of an idea through its improvements and perfections to the filing of a

¹ For a detailed account of how BI survived by securing further investments to exploit its original technology in a different market segment see: Ron D. Katznelson, Comments submitted to OMB on the Patent Office's proposed rules limiting claims and continuations number", (June 29, 2007), Appendix B, at 26. Available at <http://www.whitehouse.gov/omb/oira/0651/comments/460.pdf>.

² The diagram in Slide 6 depicts the actual 5-year invention development history of Rearden's MOVA system, the advanced motion capture technology, on which award-winning motion capture services are based. (See <http://www.mova.com>).

mature patent application. More broadly, Slide 7 illustrates evidence from many technology classes and arts practiced at U.S.-based patenting universities. It shows the length of time from an internal invention disclosure submission date (which follows the invention conception date) to the actual filing date of the priority patent application with the USPTO. Approximately 13% of all priority filings took place more than 1 year after internal disclosure and 4% were filed more than 2 years after such disclosure. Under FTF, these types of applications would be unfairly denied a long and valuable priority property right. Any art published after the invention but before first filing would render the patents invalid, even though the invention preceded the publication. In that event, applicant's only recourse would be to hastily file shallow, skimpy and less informative applications. In many instances, applicants would not risk exhausting valuable priority time on vetting, selecting or perfecting invention disclosures and would also file applications for cases that are held back under current law (see Slide 8). Consequently, such applications may have substantial enablement defects and/or may prematurely focus on (ultimately) unsuccessful paths, rendering patents that may issue therefrom mostly useless to their owners.

Slide 9 contrasts abandonment rates of patent applications at the European Patent Office (EPO), showing that within several years after filing, applications filed under the priority-setting pressure of FTF are dropped at much higher rate than applications whose filing dates do not affect their priority. There is very little doubt that the former applications are of lower quality compared to the latter. As seen on the left column of Slide 9, a significant fraction of these FTF-based priority applications are abandoned after the EPO publishes the search report for these applications. Evidently, by publishing a search report and deferring examination, the EPO pre-examination procedures mitigate some of the deficiencies of the FTF system.

Unfortunately, the U.S. does not employ the interim procedure of publishing a search report, because the search function at the USPTO is an integral part of the examination process. Thus, under a U.S. FTF system, examination would commence on a much larger fraction of hastily prepared and filed applications. Moreover, applicants would have very little incentive to abandon applications for which they have sunk costs including drafting the applications, filing, search and examination fees, etc. With little incremental investment, applicants may obtain *some* allowed claims in many of these lower quality applications. Without the pre-examination application disposal mechanisms used in foreign patent offices, the USPTO would have no

choice but to process most of these applications, resulting in higher workload and a flood of lower quality patents being issued. The differences between foreign patent offices' pre-examination mitigation measures and the total lack of such measures at the USPTO have been ignored by FTF proponents and are not objects for "harmonization". This is perhaps a strong indication of the inadequate substantive forethought that went into crafting of the proposed FTF legislation.

Slide 10 shows that patent applications filed by patentees from the top 10 patenting European countries have an average disclosure breadth that lags behind that of U.S. patentees. Several factors can account for that difference. Clearly, the lack of FTF priority pressures on U.S. patentees (who later file their U.S. priority-based applications at the EPO) and the fact that European patentees are often under the 'First-to-File gun', must account for some of the observed difference in average disclosure breadth. Patent applications with longer disclosures are more valuable to their owners (Slide 11).

Under FTF, innovators seeking investments and strategic partnerships would be faced with Hobson's choice of disclosing their inventions that are under development (even under confidentiality agreements), knowing that a recipient may have far greater resources to move quickly on variants and improvements in an FTF priority race to the patent office. Chilling effects for cooperation are summarized in Slide 12. Those were assumed in subsequent slides.

Returning to the BI development history under the hypothetical FTF patent system, Slide 13 shows that BI would have had difficult times in holding technical discussions with strategic players such as Motorola and may not have been able to secure their participation. Consequently, in high likelihood, the transition to the new market segment would have been foreclosed. This adverse condition would have forced BI to wind down and close its doors. The remaining valuable assets of the company including all patents and pending applications would have been sold to the highest bidder (Slide 14).

In conclusion, we are fortunate that the scenario described above did not materialize, as BI operated under an FTI patent system. In contrast, the FTF system would reduce patent quality and harm innovators (see Slide 15). It would also have adverse foreign trade implications and would weaken US patentees relative to foreign patentees (see Slide 16).

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*Comments on Patenting Strategies
Under a Proposed First-To-File Patent System*

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Selected Advance Question to Panelists:

➤ 5. Patent Strategy

(a) In pursuing patents during the invention and development stages, what considerations do you take into account? How do you ensure adequate protection for potential products? What role does continuation practice play in obtaining adequate protection?

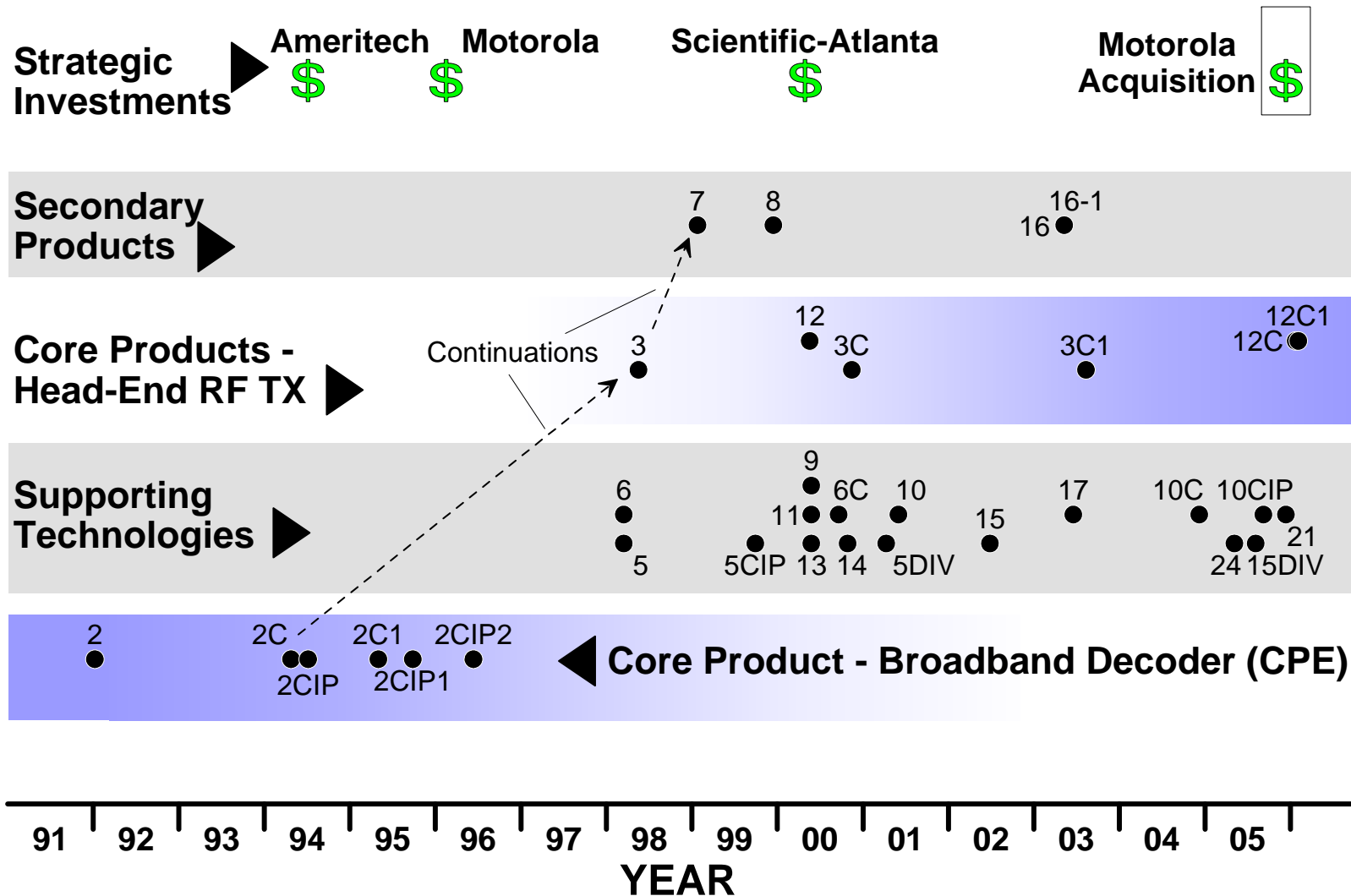
➤ Answer: The following is based on experience from my company *Broadband Innovations*, a San Diego based communication hardware company:

- Dependent on patented technologies
- Acquired in December 2005 by Motorola

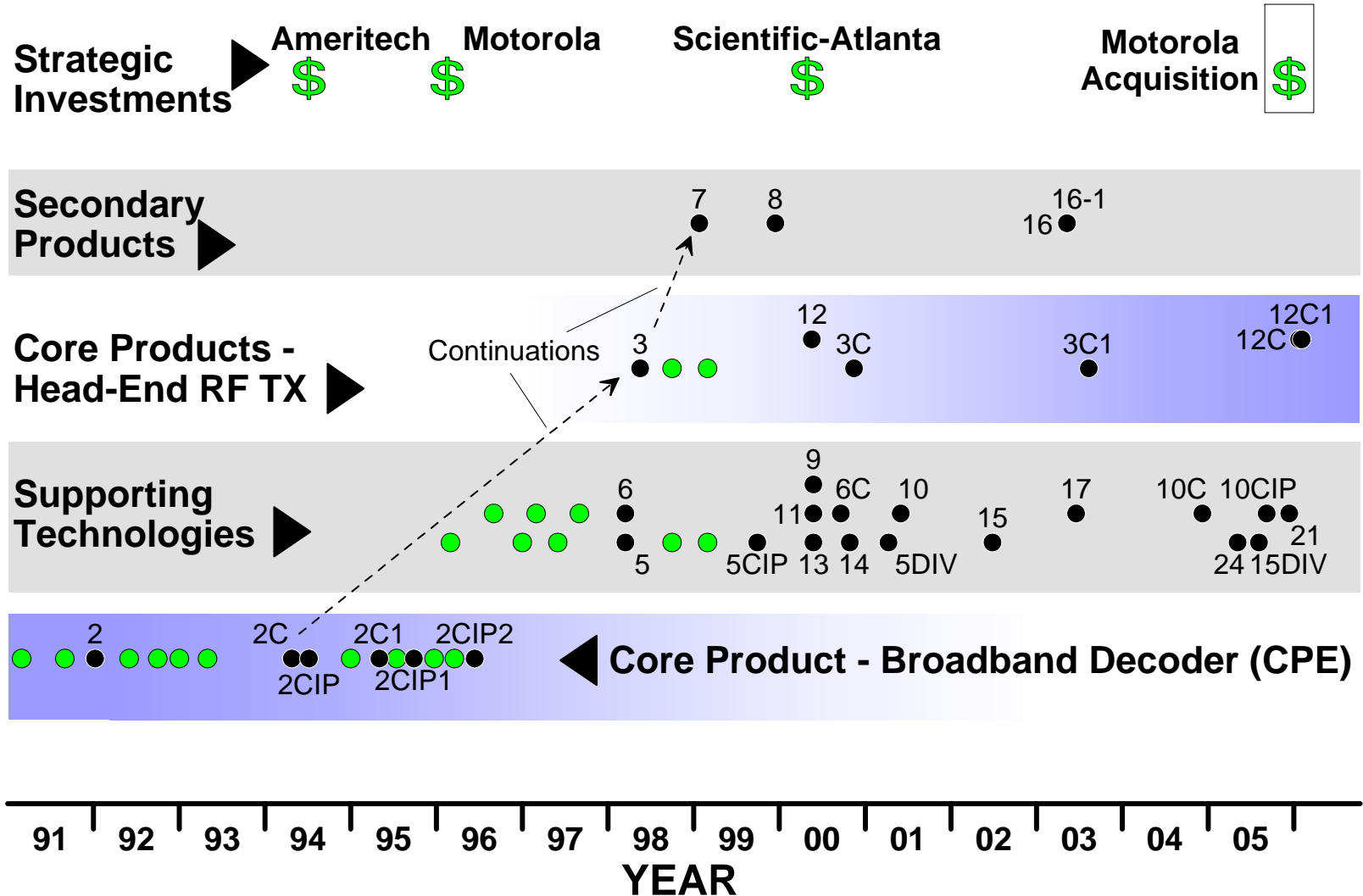
Patent Strategy – The relevance of ‘First-To-File’ (FTF) legislation to this FTC inquiry

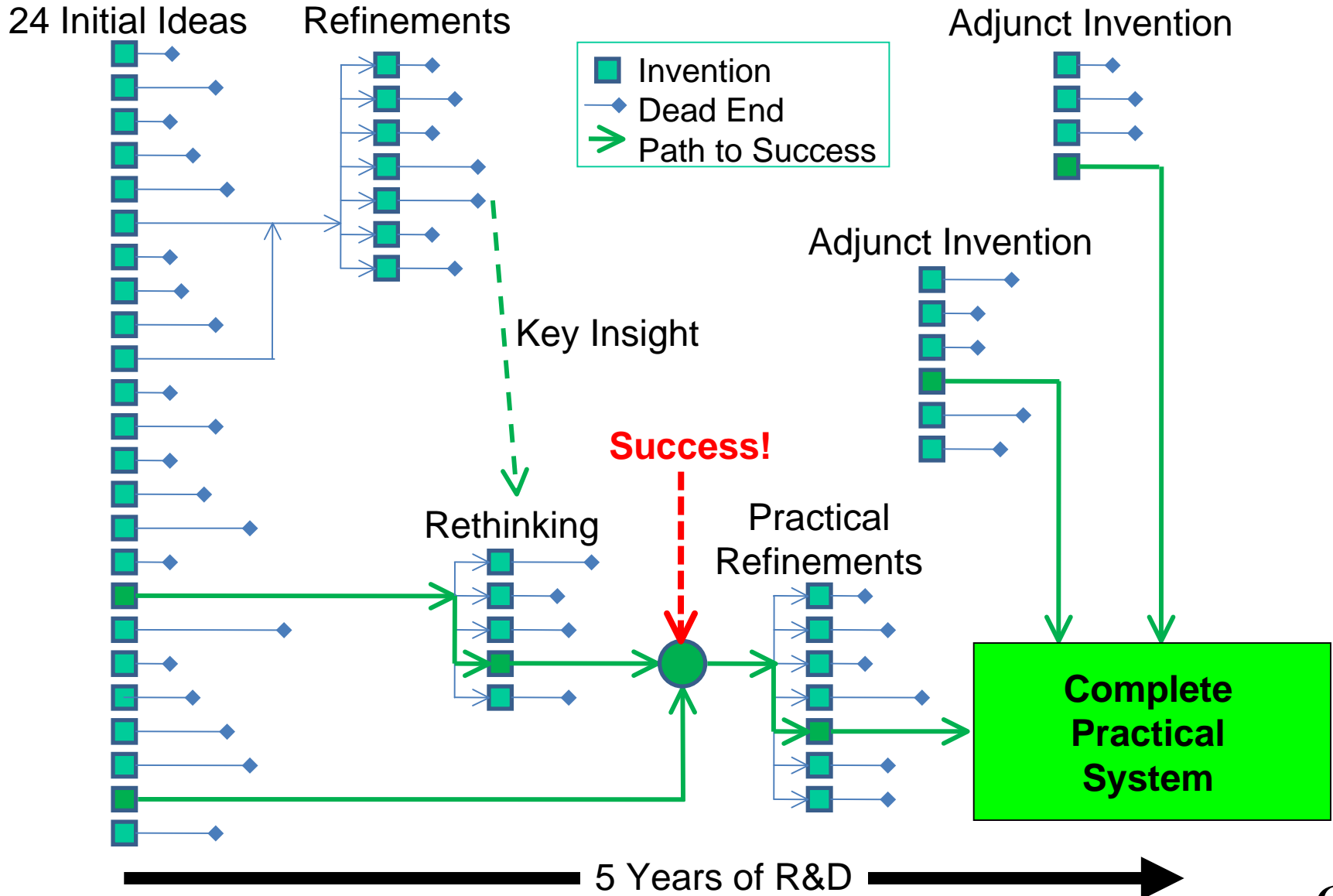
- 5. FTF provisions to amend 35 U.S.C §102 appear surprisingly less controversial.
 - Focus is mostly on Damages provisions
 - Large firms indicate that they are “already using” FTF
 - Based on congressional statements, passage is likely this congressional session.
- By the publication time of the FTC report on these proceedings, FTF may well be the law of the land.
 - Therefore, this analysis of patent strategy is in view of FTF.
 - Important factors and harm to American innovation that have not been fully considered are identified.
- Hypothetical likely scenario for my prior company, Broadband Innovations (BI), had the proposed FTF patent system been the law:

Broadband Innovations' (BI) Patent/Technology Timeline as it Took Place Under Existing First-To-Invent Patent Law

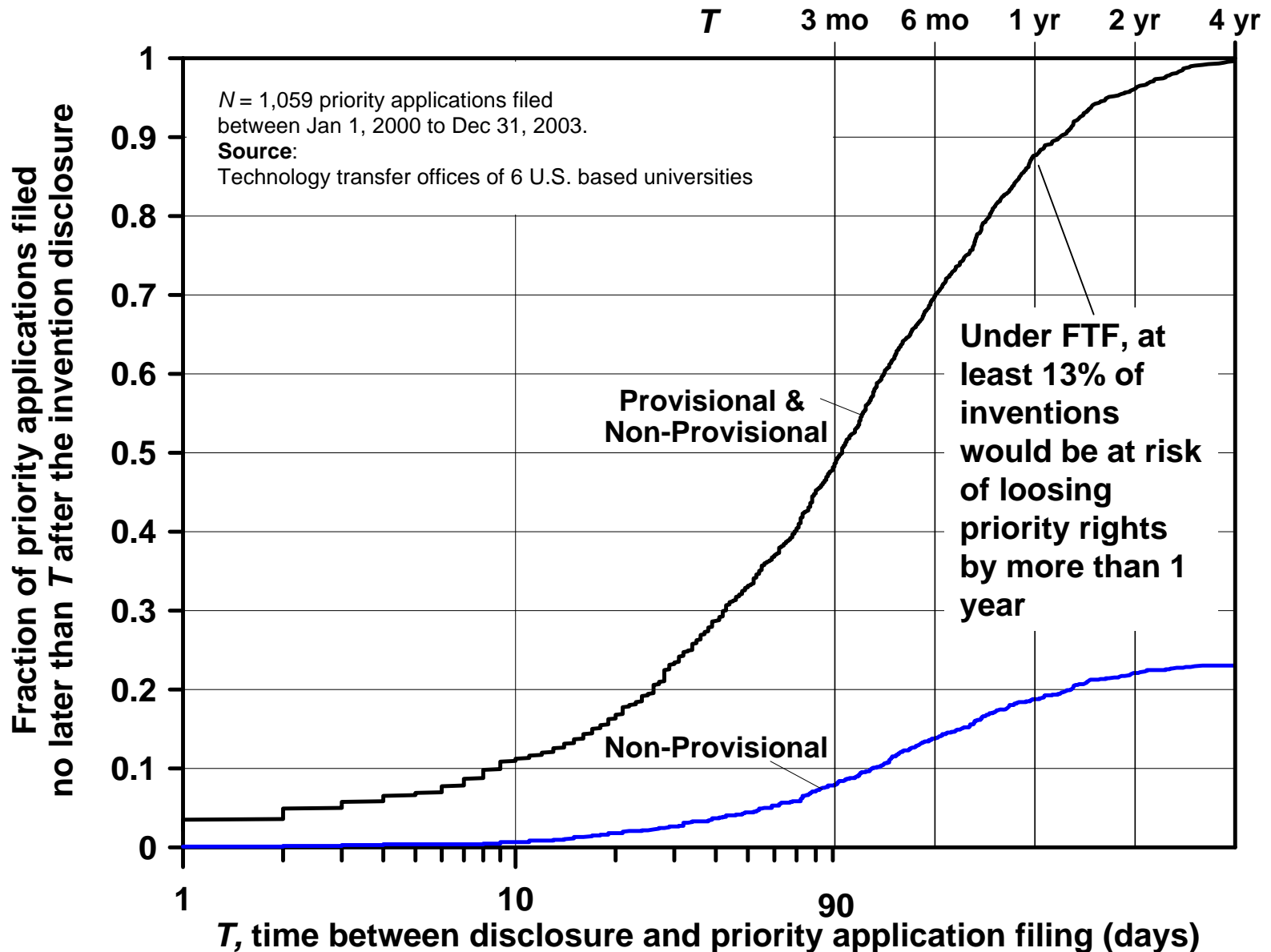


Hypothetical Scenario: Many More Applications Would Have Been Filed by BI under a 'First-To-File' Patent System





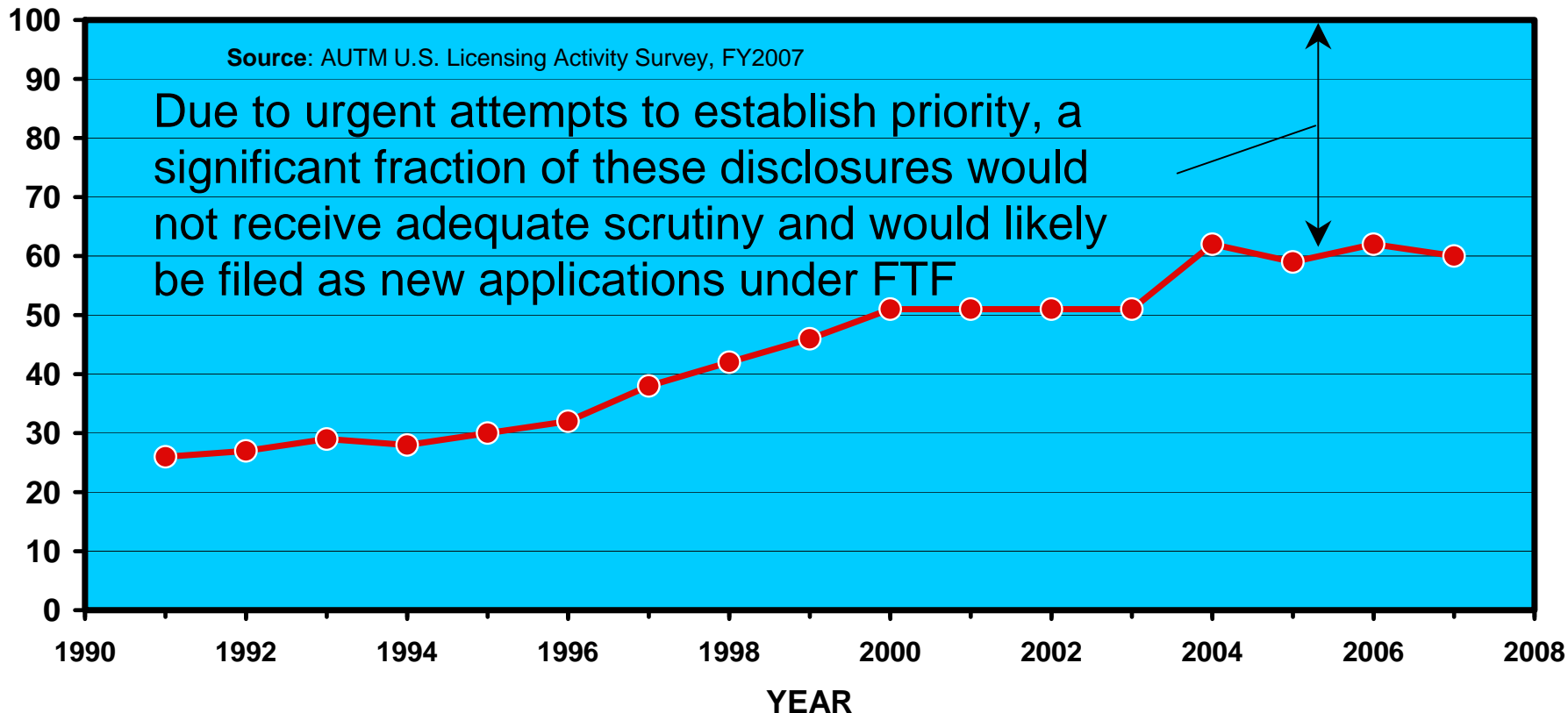
Time between invention disclosure receipt at US-based universities and filing of the priority patent application with USPTO



Many disclosures that are currently held back would be filed under a 'First-To-File' system

U.S. universities' original patent application filings as a fraction of patent disclosures received

Applications/
Disclosures (%)

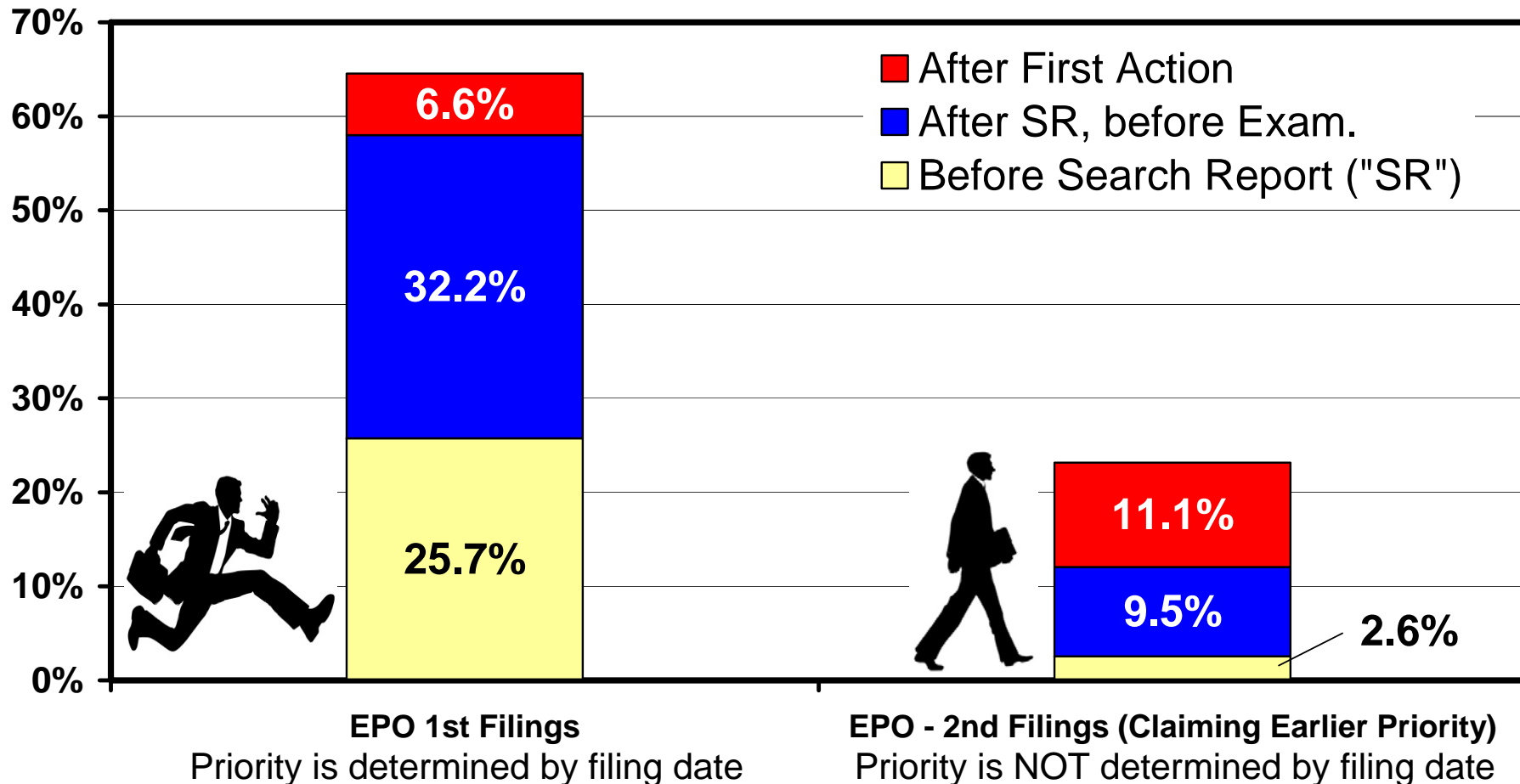


Applications with priority dependant on filing date are less mature and are more likely to be abandoned

Fraction of Applications Abandoned

EPO Patent Application Abandonment Stages

(Euro-Direct filings in 1997-1999)

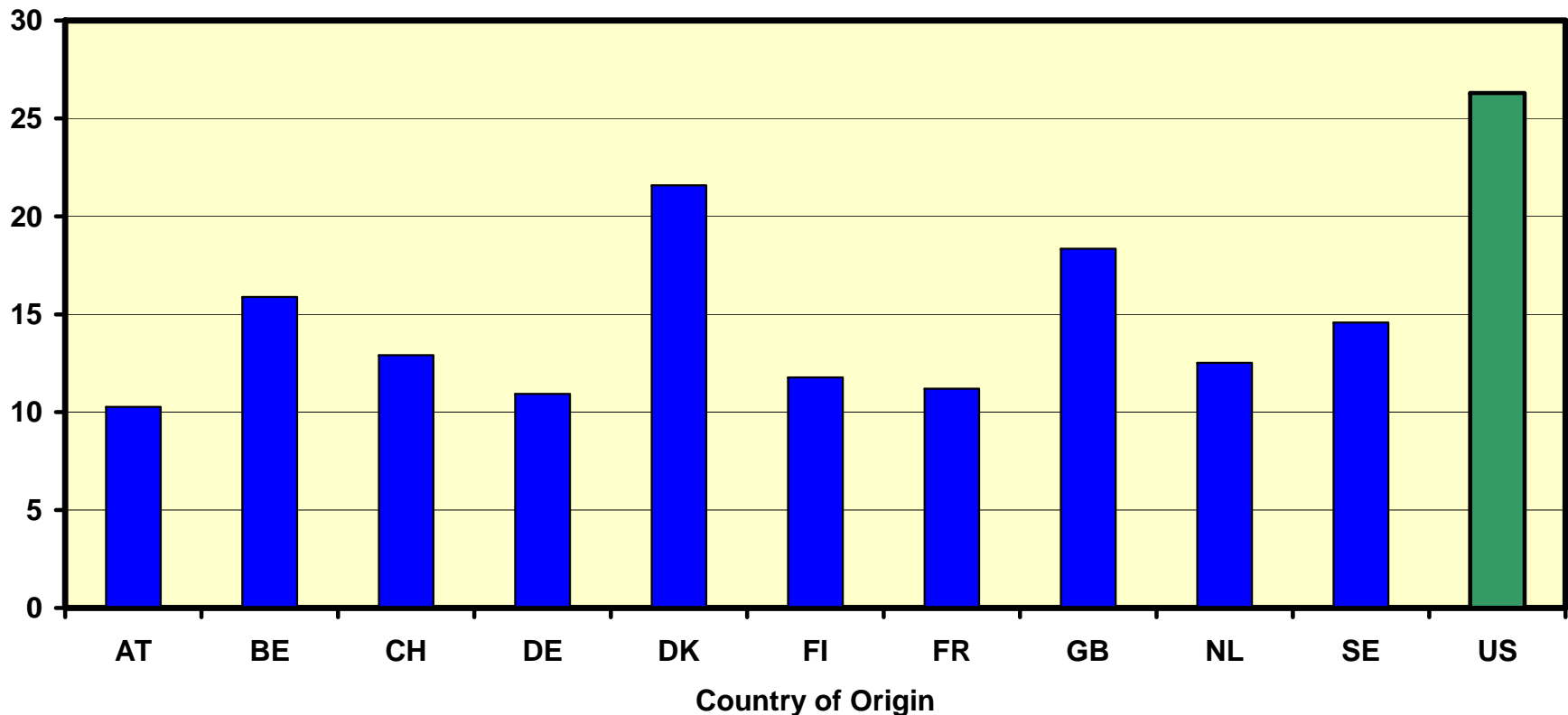


Data Sources: EPO Data from G. Lazaridis et al. *World Patent Information* 29, pp. 317-326, (2007). "After SR, before Exam" and "First Action" here means the withdrawal components (2)+(3) and (4) respectively, as defined in the heading of Table 2.

Notwithstanding other explanatory factors, patentees in 'First-To-File' European countries lag behind in patent disclosure breadth compared to US patentees

Average Number of Description Pages in EPO Applications from US and top 10 patenting European countries

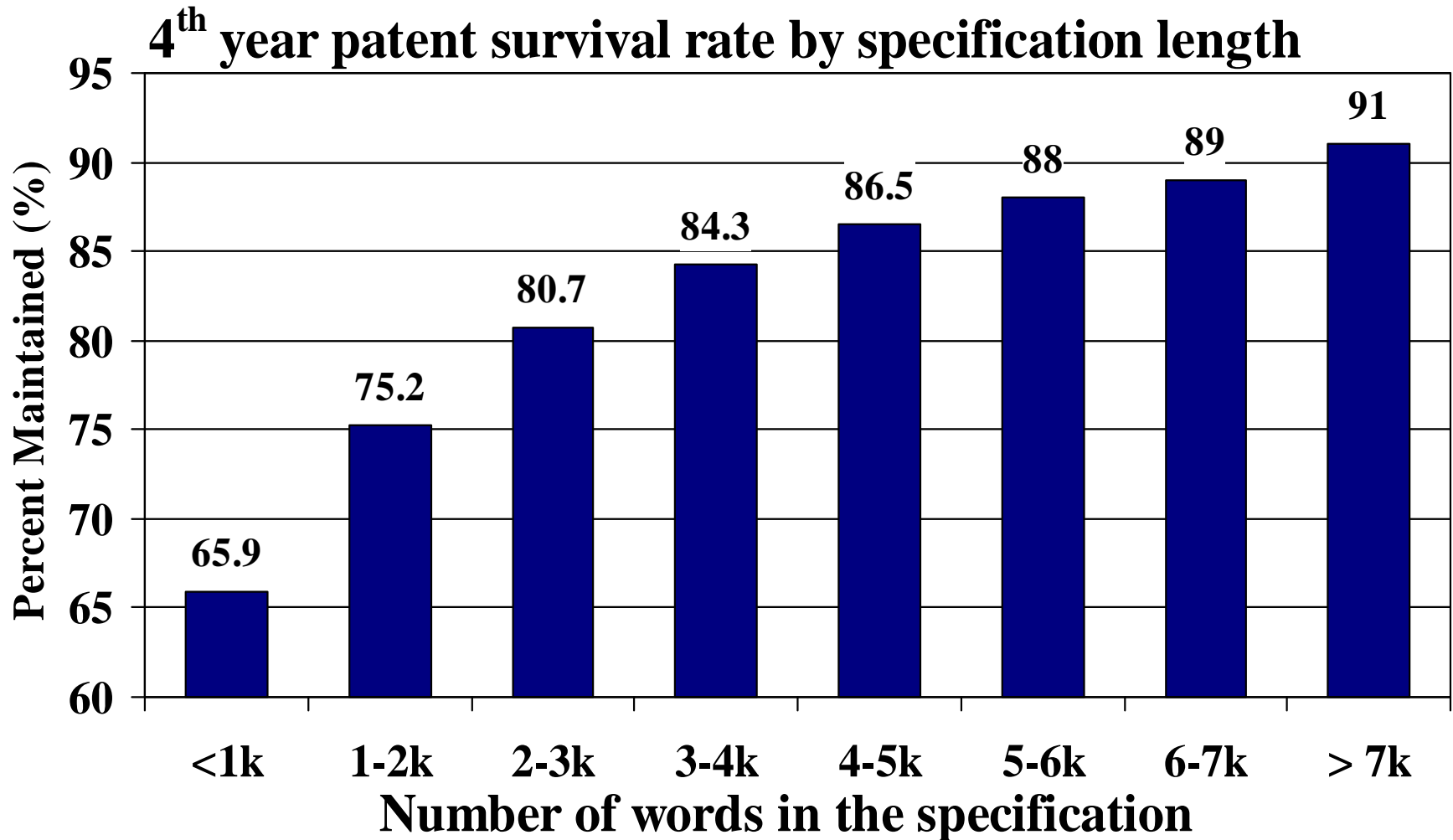
Description Pages



Source: E. Archontopoulos et al, When small is beautiful: Measuring the evolution and consequences of the voluminosity of patent applications at the EPO, *Information Economics And Policy*, **19**(2), pp. 103-132, (June 2007).

Based on nationality of patent applicants filing at the EPO in 2002

Longer Disclosures Confer More Valuable Patent Rights



Source: J.A. Barney, *AIPLA Quarterly Journal*, 30(3), pp. 317-352 (September 2002).

Data for patents granted in 1996.

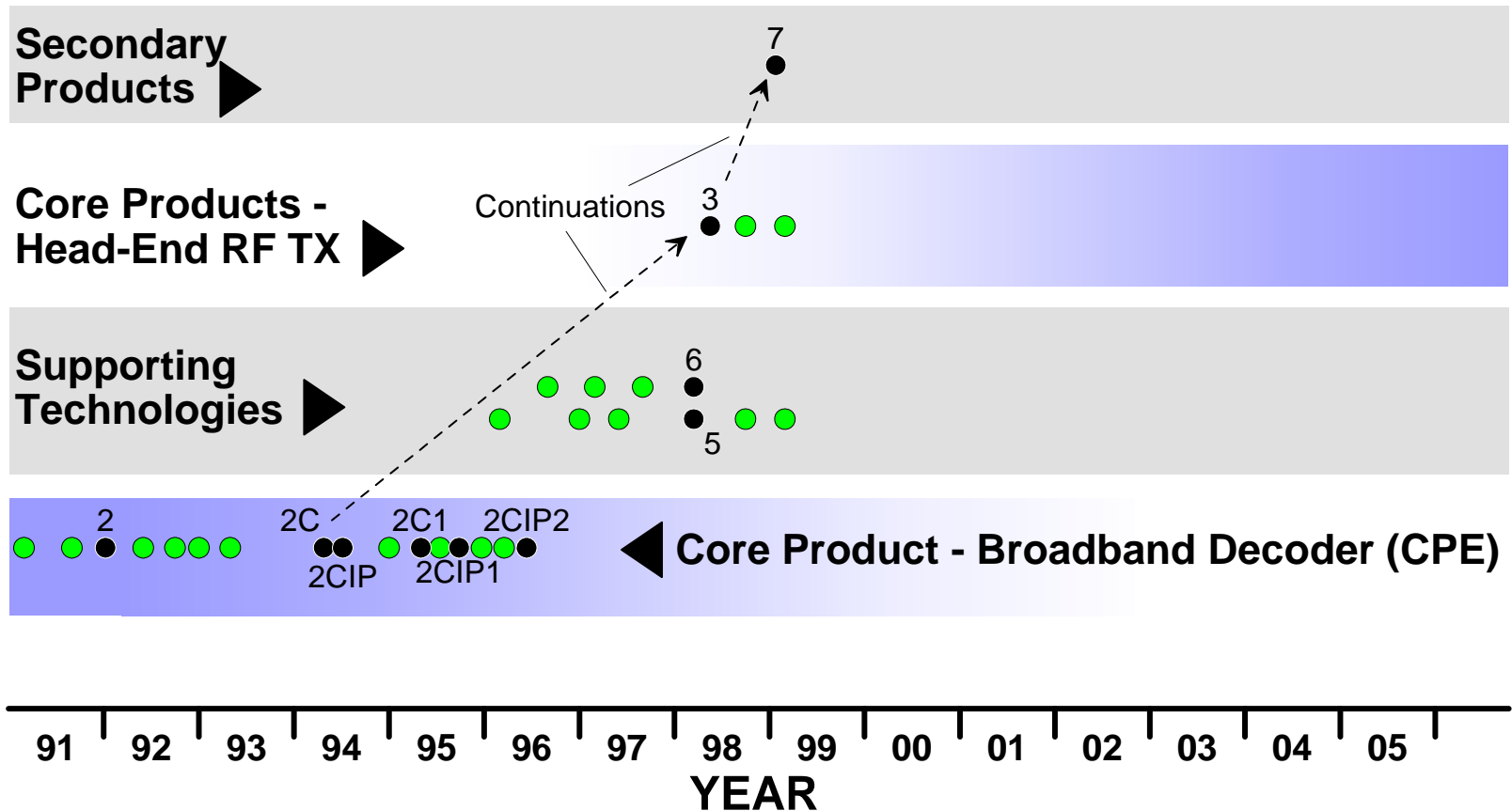
FTF would change how we do (or not do) business

- A concern that an established strategic "partner" may misappropriate ideas received under NDA and derive its own parallel "FTF priority" process in competition, would discourage innovator's cooperation with strategic partners in the most crucial stage of their startup's development.
- Would have strong chilling effects on:
 - Joint developments, responses to RFPs
 - Substantive due diligence of investors or prospective licensees.
 - Effective marketing communications.

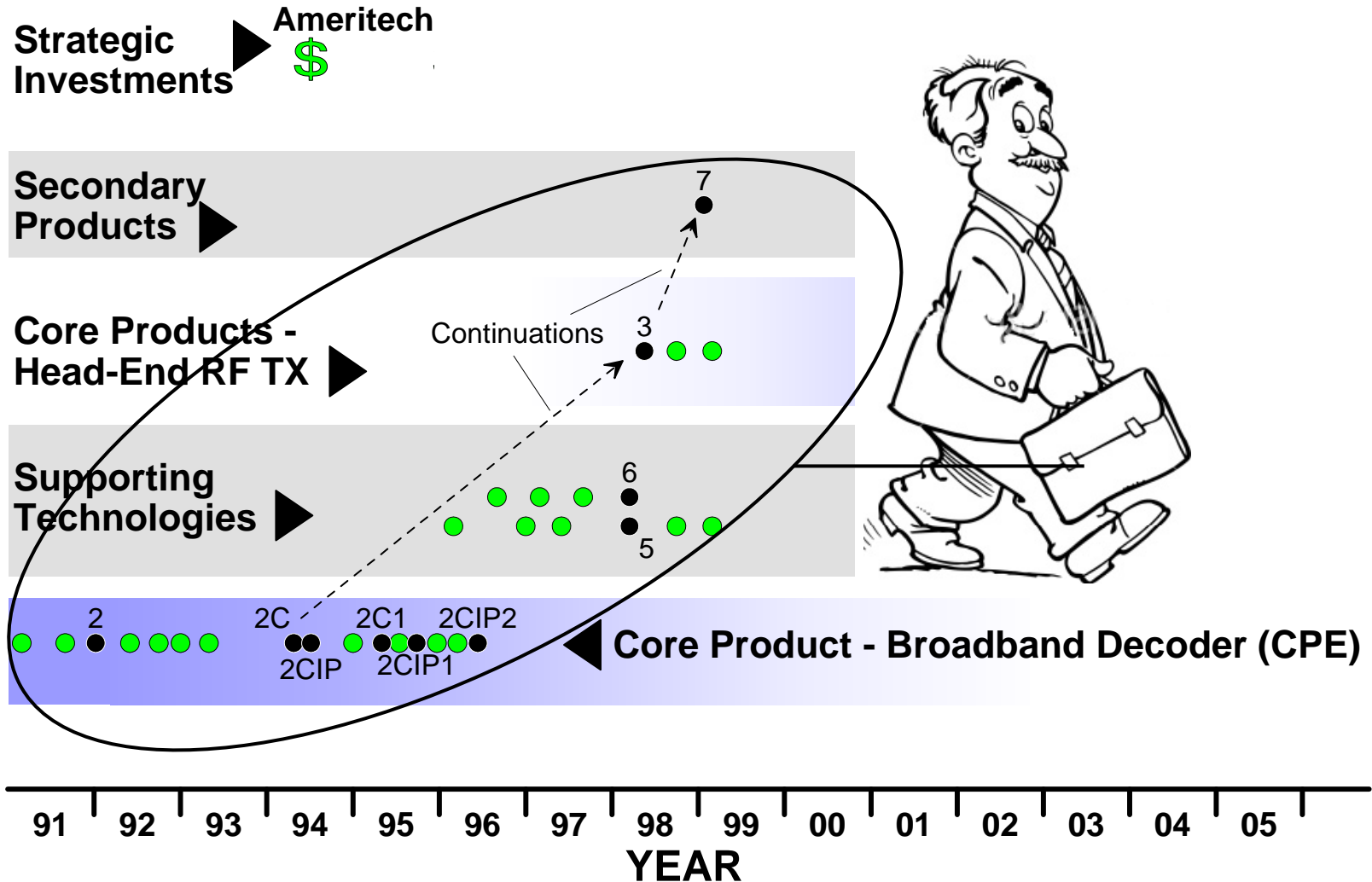
Hypothetical Scenario: Insufficient information flow under FTF, would have likely eliminated strategic partners' investments in BI

Strategic Investments Ameritech

Result: Likely company failure before the product transition



Hypothetical Scenario: BI's investors would have had to sell the assets, including the additional hastily prepared patent applications. Perhaps to a 'Troll'?



'First-to-file' Patent System – Implications for American Innovation and Competitiveness

➤ Reduced Patent Quality:

- FTF would result in a flood of shallow, race-to-the-patent-office patents. Would encourage “paper inventions” that are untested.
- Would generate more work for the USPTO and more fodder for ‘trolls’. **30% estimated increase in application filings at the USPTO, while reducing patent renewal revenue yield.**
- The resultant decline in disclosure breadth would not only deny the public from receiving the full benefits of the patent bargain, but will also produce a progressively poorer prior art record, resulting in overbroad or low quality patents subsequently being issued.

➤ Harm to Innovators:

- Domestic inventors would lose substantive priority rights that are often critical in upholding patent validity.
- Other innovators would have to invest R&D in non-infringing solutions “**designing-around**” patents that would have never been applied for, let alone issued, under the current First-To-Invent system.
- Increased patent filing costs due to the need for more frequent filings.

Unintended consequences of “Harmonizing” down

- As it pertains to FTF, "Harmonization" is another word for tipping the trade scale in favor of our trading partners. Currently, US patentees file more extensive and detailed applications in part because they are not under the ‘First-to-File gun’. They later file the same applications in foreign countries. In both venues, US applicants are able to submit more claims that have broader support in the disclosure. – Better and more valuable patents.
- Foreign inventors must make due with less specification support and are therefore generally disadvantaged compared to US applicants when the scope and number of claims are considered. This US advantage should not be taken away.
- A US originated patent right is more valuable to its owners because it is more effective in excluding foreign originated products *even in foreign markets*.
- Changing the current law for the sake of removing uncertainty in only a *few hundred interference cases* will likely have far reaching unintended adverse consequences to US innovation and economy.

‘First-To-File’ Patent System – Is Harmonization Worth the Harm?

- Over more than a century, the American First-To-Invent system struck a systematic legal balance between the written description and enablement requirements and the patentee’s priority entitlement.
- American expertise in the processes of developing IP would be “thrown out the window”, requiring a new learning curve, development of new case law and new strategies, taking years to develop.
- Currently, inventors’ activity within the U.S. can be relied on to establish an invention date earlier than the filing date. FTF will remove current patent priority-based incentives for keeping R&D activity in the U.S.

Who would be the real winner under First-To-File?



Conclusion

**Who would be the real winner under First-To-File?
- Not American Innovators!**

**First-to-File:
Is it really worth it?**



Thank You

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