

NAPCS Discussion Paper*

**An Approach for Identifying and Defining Intellectual Property (IP) and
Related Products in Product Classification Systems**

by

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A. Introduction

The definition, valuation, and measurement of intangible assets generally and of intellectual property (IP) specifically has long been the subject of inquiry and debate among corporate accountants, tax authorities, and economists engaged in product classification, national income accounting, and productivity research. In recent years, however, this interest has moved from the arcane to the mainstream because of the widespread perception that IP, rather than “brick and mortar” and other physical assets have been a major force in the rapid growth of GDP, productivity, and wealth that occurred during the 1990's in the U.S. Among economists, for example, the recent productivity and growth accounting literature has been intensely focused on testing the hypothesis that much of the large unexplained quotient of long-term economic growth (total factor productivity) can be accounted for by better measurement of IP and other intangible assets that are regarded as components of “knowledge capital” inputs to industry production processes.^{1 2} In an apparent ratification of this hypothesis, the value of and trade in IP has grown sharply and companies that own IP have been moving them to offshore and other tax shelters to more fully exploit the commercial value of these assets.³ Given the importance of and interest in IP in a broad spectrum of economic applications, it is important to have a systematic and defensible approach to identifying and defining the products spawned by intellectual activity in product classification systems. To that end, this paper suggests a approach for the identification and definition of products resulting from the creation and exploitation of IP.⁴

¹See, for example, papers presented at “Measuring Capital in the New Economy” Conference on Research in Income and Wealth, National Bureau of Economic Research, April 26-27, 2002.

²In a widely cited work, Baruch Lev divides knowledge capital into four classes: (1) Discovery/Learning Intangibles Ctechnology, know-how, patents, and other assets emanating from the R&d and learning process of businesses, universities, and national laboratories; (2) Customer-Relations Intangibles Cbrands, trademarks, and unique distribution channels which create abnormal earnings; (3) Human-Resource Intangibles C Specific human resource practices, such as training and compensation systems, which enhance productivity and reduce turnover; and (4) Organizational-Design Intangibles Cunique structural and organizational processes, technologies, and blueprints generating sustainable competitive advantage and value. See B. Lev, *Intangibles: Management, Measurement, and Reporting*, The Brookings Institution Press, UK, 2001. Similarly, Corrado et al divide knowledge capital into three components: (1) Computerized Information Ccomputer software; (2) Technology and Innovative Property CR&D component of knowledge capital; includes scientific knowledge and innovative and artistic content embedded in patents, licenses, un-patented general know-how, copyrights, and designs; and (3) Economic Competencies Cthe value of brand names, a.k.a. marketing capital, and the value of firm-specific human and structural resources, a.k.a. organizational capital. See C. Corrado, C. Hulten, and D. Sichel, *Measuring Capital and Technology: An Expanded Framework*, paper presented at A Measuring Capital in the New Economy Conference on Research in Income and Wealth.

³See, Glenn R. Simpson, A A New Twist in Tax Avoidance: Firms send Best Ideas Abroad, The Wall Street Journal, June 24, 2002, and “A Tax Maneuver in Delaware Puts Squeeze on States,” The Wall Street Journal, August 9, 2002.

⁴Portions of this paper incorporate material supplied by Ken Young, NAPCS Coordinator for Statistics Canada, and Robert Benedik, U.S. NAPCS subcommittee Chair for NAICS 5417 (Research and Development Services) and for NAICS 61 (Educational Services).

B. Intellectual Property Defined

The U.S. Copyright Clearance Center describes IP as follows:

Intellectual property is a legal concept under which we manage the protection and use of products of the human mind (as opposed to the human hand). The U.S. Constitution and the "Federalist Papers" refer specifically to patents (which apply to "useful articles," traditionally inventions) and copyrights (which applies to literary expressions,= traditionally books and articles) as comprising the scope of intellectual property. There have also been some more recent additions: Outside of patents and copyrights, there are such things as trademarks and service marks (like "Coca Cola"), "trade dress" (a more amorphous concept involving the "look" of a product, like Coca Cola's red & white can with a script logo), "trade secrets" and others. All of these separate areas of the law and commerce have been collected under the general term "intellectual property." However, they are very different from each other and are meant to protect different things.⁵

Similarly, the Canadian Intellectual Property Office, in "A Guide to Copyrights" defines intellectual property as,⁶

... a form of creative endeavor that can be protected through a copyright, trademark, patent, industrial design or integrated circuit topography.⁷

Under Canadian, Mexican, and U.S. law, the owners of IP are afforded a variety of similar legal protections, depending on the category of IP owned. In the U.S. these protections are defined in the body of law related to patents, copyrights, trademarks, and trade secrets.^{8 9} Patents protect scientific originals (blueprints, plans, formulas, etc) for inventions, products, and processes. These patents provide exclusive rights to make, use, import, sell, or otherwise offer for sale an invention for up to 20 years. Unpublished creative material (works of authorship and art) described by original manuscripts of books, plays, and poems or by original scores of music or original computer code are implicitly protected by copyrights; i.e. by "operation of the law once the material is fixed whether or not the original was registered."¹⁰ Books and films are copyrighted and software can be both

⁵See (<http://www.copyright.com/copyrightresources/default.asp>).

⁶See (<http://www.cb-cda.gc.ca/info/links-e.html>).

⁷While Canada and the Europe recognize industrial design protections as distinct from patent protections, U.S. law does not does contain such a distinction; IP protected by industrial design protections is protected by patents in the U.S. and Mexico.

⁸See, "Intellectual Property, Industry and Agency Concerns over Intellectual Property Rights," Statement of Jack L. Brock in testimony before the Subcommittee on Technology and Procurement Policy, Committee on Government Reform, House of Representatives, United States General Accounting Office, May 10, 2002.

⁹Not all IP is legally protected, and even when it is there are often "fair-use" provisions that allow some unpaid use of protected material. Another common form of legal protection, franchises, pertains to intangible assets that are not IP.

¹⁰From conversation with John Raubitschek, Office of General Counsel, U.S. Department of Commerce.

copyrighted and patented; in general copyrights protect form of expression contained in original work, while patents protect the original process or product described by the work. Trademarks protect company names, logos, colors, numbers, and sounds. Trade secret law protects other information, such as recipes, that companies keep secret to gain competitive advantage. (See also material in Appendix 3.)

C. Conceptual Approach for Identifying and Defining Products

The conceptual approach proposed here for identifying and defining products related to the development, trade in, and use of IP is based on the primal definition of a product recommended for NAPCS by the U.S. Economic Classification Policy Committee (ECPC):

The aim of the product classification process should be to identify, define, and classify the final products produced and transacted by the reporting units within each industry. The final products of reporting units in an industry are those that are created and transacted (sold or transferred) by the reporting units to economic entities outside of the individual reporting units.¹¹

Application of this “production” definition of product is not intended to provide guidance on the identification and definition of specific products, mirror the production boundary of the 1993 SNA, or resolve the variety of measurement issues that exist for specific statistical uses of product classification systems. Rather, the application of the production definition is intended to insure: (1) a consistent perspective on how products are identified and defined in NAPCS (producer versus consumer) in its principal application (classification of products collected from industry reporting units); (2) consistency between the definition of product to be collected and the principal population of data providers (producers); (3) comprehensive coverage of the universe of products that can be produced (wherever-made) and transacted in the economy, and (4) product detail and definitions sufficient to form well defined product groups and aggregates in NAPCS based on input obtained from extensive outreach to industry experts¹²

Under this production definition, the product classification will identify all things that are produced and transacted but will not include either transactions involving no current production—used goods, used assets— or goods and assets that are produced and consumed within the production unit. (There will, however, be separate categories for the services associated with reselling used products, wholesale and retail transactions, where the service provided is the product rather than the products sold.) Finally, for non-production applications of NAPCS, product definitions can be

¹¹ See Federal Register Notice of April 16, 1999 and the April 8, 1999 Daily Bulletin of Statistics Canada. Although this definition of product may not be appropriate for every application of NAPCS (see discussion in text), it has been employed in practice by Canada, Mexico, and the United States as the primary working definition of product used by NAPCS subcommittees and associated three-country working groups.

¹² At this time, the precise classification of IP-related products in NAPCS is undetermined. Presently, Canada, Mexico, and the U.S. are actively engaged in researching and discussing the details of the NAPCS structure. However, there is agreement among the three countries that NAPCS will be a demand-based aggregation structure that groups and aggregates products according to how they are used and that provides an integrated treatment of goods and services used in close association with each other within the structure.

customized to conform to the specific data requirements of a given survey. For example, a product of personal computers could be collected by one survey as output, by another survey as consumption by business, and yet another survey could collect information on the number of PCs produced and consumed in the operations of a unit. Additionally, a household consumption or business consumption survey could add specific details to delineate between new and used PCs consumed. The goal of the system is flexibility in data collection while providing definitional standards for grouping the data.

D. Application to Intellectual Property Transactions

Under the production definition of product, two categories of products flow from the development and exploitation of IP. First, there are original IP products, which are limited to the speculative production (production intended for sale) of original IP. Second there are products that result from the exploitation of original IP and these in turn fall into two sub-categories: (1) IP-licensing transactions that grant others the right to use original IP and (2) IP-derived products that are created by exploiting original IP to produce and transact new products; for example, using a patented design when manufacturing a stapler. In most circumstances, the distinction between IP products (speculative production and licensing of IP) and IP-derived products is clear and causes no problem for identifying and defining products. Thus, the major products of book publishers are defined as books produced for sale, regardless of whether they were derived from rights acquired outright or leased from original authors. Similarly, the major products of manufacturers are defined in terms of the various products brought to market, regardless of whether they may be derived from patented IP developed in house or from patent rights purchased outright or leased from a patent holder. Finally, in some situations, the exploitation of IP results in the production of a new intellectual property product: e.g. a film produced from film rights to an original book is IP and so is the original book. There is also an important apparent asymmetry that occurs with respect to the IP-derived product descriptions for publishing industries, record production and distribution industries, and motion picture and video production and distribution industries (This asymmetry is discussed in Appendix 2). Overall, the production approach proposed here treats the products that flow from the development and exploitation of physical assets and IP in a consistent manner. Thus, the following transactions in both physical assets and IP assets are treated as products:

1. Contract production of an asset for another entity,
2. Speculative production of an asset,
3. Leasing and subleasing of an asset (or rights) by the holder to another entity for its own economic use.

D.1. Contract Production of IP

Contract production of IP assets can be described using an illustrative example. A drug company contracts with a separate research and development (R&D) firm to produce a patented drug. The drug company pays the R&D firm for the work and takes ownership of the new drug and all the rights associated with it. Under the proposed approach, the research and development services produced by the R&D firm on behalf of the drug company are recorded as products, but the IP created is not. The drug company has paid others to produce an IP asset and the capitalized value of these payments can be recorded in an asset account.

D.2. Speculative Production of IP

Speculative production refers to production intended for sale that is undertaken without either a contract or known buyer in mind. This approach treats speculative production (sale plus inventory change) of unused IP consistent with the treatment of speculative production (sale plus inventory change) of unused physical assets. Referring back to the previous example, suppose the R&D firm produced original scientific IP (a patented drug) on a speculative rather than a contract basis. The speculative production of unused IP is a product in this approach, just as speculative construction of an unused building by a builder is a product. Both types of transactions are products that fall within the current production boundary under the proposed approach for identifying and defining products. In addition, this approach treats speculative production of unused creative originals (entertainment, literary, artistic, and software originals) symmetrically with corresponding production and sale of unused scientific originals.¹³ Again, both types of transactions involve products that fall within the current production boundary, and these products are both IP products.

D.3. Licensing and Sub-Licensing Rights Associated with IP

Also akin to the treatment of physical assets, this approach recognizes that an additional service product is created both when IP is originally leased by its owner and when it is sub-leased by a lessee. In contrast to physical assets, however, contracts used to lease IP assets are defined as licenses as opposed to lease or rental agreements, and the payments received for the service of leasing IP assets are defined as royalties and license fees as opposed to rent or lease receipts (See additional discussion of IP, royalties and license fees, and licensing in Appendix 3). Once an entity has obtained the rights to IP, either through acquisition or in-house production, those rights can be leased or licensed to others for their own economic use. A patent for the design of a manufactured good can be licensed to a manufacturer, the rights to use a trademark can be licensed to another entity, or the rights to use a copyrighted work can be licensed to another for a specific purpose, such as the right to use a sound recording in a television commercial. The specific license agreement may allow only a specific use or may more broadly allow the re-licensing or subleasing of those rights to third parties. This type of exploitation of IP is considered production and specifically identified under this approach. Using the example from the previous two cases, when the holder of the rights to the patented drug licenses others to produce and sell that drug, the transaction is considered an IP-licensing product and identified separately. In sum, this approach incorporates transactions that involve the paid use of intellectual property of all kinds. It doesn't matter whether one is dealing with a copyrighted or a patented article. In principle, licensing the right to use an invention is treated the same in this approach as licenses to use copyrights; both products are tantamount to the service of leasing an asset to another entity, although they are separate products.

A Note on the Distinction between Licensing the Right to Use IP and Conventional End-Use Licenses - In this approach the generic product “licensing the right to use IP” is limited to those situations where the licensor grants the licensee the right to use IP in a manner that goes beyond the normal rights conveyed in conventional end-use licenses. Examples include the right to use a patent

¹³In terms of data collection, reporting units would report (1) revenues from sale of unused scientific and creative IP originals that are either covered or potentially eligible for patent, copyright, trade secrets, and trademark protection and (2) change in amortized value of speculatively produced stocks of unsold and unused scientific and creative IP.

for a stapler or drug to manufacture and market the new stapler or drug; the right to use an original book manuscript to publish and market a book; the right to use original music to develop and market a recording; the right to distribute copyrighted films; and the right to use patented systems software in another software system. In general, licensing transactions that convey the right to reproduce, modify, incorporate, distribute, or rent the original IP belong in the generic product “licensing the right to use IP.”

Conventional end-use licenses are excluded from licensing the right to use IP. Such licenses are routinely attached to products sold in the market place, including staplers, books, music CDs, videocassettes, and packaged software. All of these products are goods derived from exploiting IP, and all transactions regarding these derived products are generally understood and defined in NAPCS as transactions involving goods rather than transactions involving licensing of rights to use IP, despite the fact that all are explicitly or implicitly conveyed to users in conjunction with a pro forma right to use contract known as an end-user license that most users are likely oblivious to.¹⁴ For example, when a manufacturer uses a patent to produce staplers, it is understood both that the stapler is a good that needs to appropriately classified according to the principles of the product classification system and that the purchaser cannot reproduce and sell copies of the stapler. Moreover, the emphasis placed on the good versus the license dimension of the transaction appears to vary with whether the medium on which the IP is conveyed to the user is tangible or electronic (i.e., intangible). This fact is especially evident with software because here the industry terminology emphasizes the licensing of rights dimension in such transactions. In NAPCS, we reject this medium-based distinction for identifying the product conveyed because electronic versions of products, while different in medium, are conceptually substitute versions of the same underlying product. Thus, books, software, recordings, and films conveyed electronically can be copied to a physical medium (CDRW, hard drive, floppy disk, and memory chip) that the user owns, has the right to use, but cannot copy for others’ use. While the classification system may include different products for the respective media on which IP-derived products are conveyed, those products should be treated in the classification as substitutable variations of the same generic product, not as distinctly different products. Under the NAPCS framework, a software product (or book, recording, or film) is a software product (or book, recording, or film) regardless of the medium on/by which it is conveyed. And when the detailed products in the classification are aggregated into use groups, the NAPCS aggregate would include both the physical and virtual versions of these conceptually common products.

D.4. Comparison of IP Products to Construction Products Using This Approach

Again, suppose the drug company has paid a separate R&D firm to develop a drug. The drug company has acquired rather than produced an asset. It can then sell the non-produced asset (no new product created) or it can exploit it. The exploitation can take one of two forms in this approach, both of which would be considered distinct final products of the drug company. First, it could produce an IP-licensing product by licensing another entity the right to use its drug patent to manufacture and sell the drug. Second, it could produce an IP-derived product by exploiting its

¹⁴ Transactions in IP-derived products do not, however, necessarily convey with the same bundle of rights. For example, purchase of a book or videotape does not customarily include the right to copy or rent the book or tape to others. In contrast, the purchase of a stapler does customarily convey the right to rent the stapler but not the right to make and sell copies of it.

drug patent to manufacture and sell the drug using its own resources.

An equivalent situation could be described for a piece of manufacturing machinery or a building. The drug company could have a plant produced on a contract basis using a construction company. The building would be an acquired asset of the drug company and there would be products for construction services that were transacted for. Once the drug company has the building, they could sell the building (no product because there was no new production) or they could lease the building to others resulting in a product because leasing the right to use the building is a product of the drug company. The general contractor receives revenue for his construction services and the company receives a building. Contract construction services that create physical assets and contract R&D services that create IP are treated consistently as similar but distinct products in this approach.

In sum, the approach provides the following guidance for identifying and defining products associated with the creation of and transactions in assets (See also discussion of IP-related products in NAPCS in Appendix 1):

- In the contract production of IP case, the products are not IP products, IP-licensing products, or IP-derived products. The products identified are R&D services. And for contract construction of a building, the products identified are construction services.
- In the case of speculative production of either IP or buildings, there is a product, the IP or the building produced, that must be identified and defined in the product classification system. The proposed approach identifies speculatively produced new buildings and new IP as separate but conceptually similar products.
- Leasing a building or licensing IP to others, whether the asset was acquired by contract, purchase, lease, or produced in-house, are both products. The approach treats the licensing of IP and the leasing of physical assets as conceptually similar but distinct products.
- As with physical assets, resales of IP assets are considered as used-asset transactions and such transactions do not constitute a product in this approach, unless they are between traditional resellers (wholesalers, retailers, agents, brokers, miscellaneous intermediaries, etc.) or between traditional resellers and final users. This treatment results from the fact that, while ownership of the asset has been sold from one entity to another, no new good or service has been created.
- Finally, there are IP-derived products—new products created from exploiting creative and scientific IP; in NAPCS these products are identified throughout the product classification in both manufacturing and service industries alike.

E. Contrast Between Treatment of Assets in This Approach and International Systems

Compared to this approach, the treatment of IP and physical assets on the one hand and of patentable and copyrightable forms of IP on the other is both unsettled and asymmetric in international systems, including the Central Product Classification (CPC), balance of payments (BOP), and the 1993 SNA. First, unlike this approach, neither the CPC nor the BOP treat speculative production and sale of unused IP assets as a product; only the leasing of these assets is recognized as a product. Second, the 1993 SNA explicitly includes speculative production of creative (entertainment, literary, and artistic) originals as products falling within the production

boundary of the SNA, and it defines the asset created as a produced intangible asset.¹⁵ As explained by Peter Hill,

The output consists of an original in the form of a new visual and /or sound recording, manuscript, musical composition etc. The original is then used to produce copies, which are themselves used in further processes of production or for consumption. The original must in fact be an intangible (produced) fixed asset, as defined in para. 10.7 of the 1993 SNA, provided it is used repeatedly in or continuously in the production of other goods and services (i.e. copies) for more than a year. Although an original must be recorded on some physical medium B paper, film, tape, disk, etc., B it must be clearly distinguished from the latter.¹⁶

However, unlike this approach, Hill also notes that the 1993 SNA does not carry this treatment over to the creation of scientific originals, such as inventions, new drugs, new processes, etc. Here no current production is recognized when scientific originals are produced and these scientific IP assets are characterized as non-produced intangible assets.

Third, the international systems do not treat contract and own-account production of scientific IP in a manner that is consistent with the production of physical assets. For example, upon completion of a contract or own-account building, the CPC, BOP, and 1993 SNA systems capitalize the construction cost as a whole and record a fixed depreciable asset (or assets) in the capital accounts. By contrast, in the case of scientific originals, these systems capitalize neither the R&D products provided under contract by R&D establishments nor the cost of own-account R&D expenses.

F. Summary

This paper presented a conceptual approach for identifying and defining the variety of products spawned by the creation and exploitation of IP. Based on the production definition of product that is the primal definition used to identify and define products supported by the ECPC for use in NAPCS, this approach identifies the universe of IP-related products produced, but it does not address specific measurement issues. It also provides for a consistent treatment of products associated with both tangible and IP assets in product classification work. The paper notes there are many uses and measurement issues associated with products generally and IP specifically in applications outside production statistics applications. But, given an exhaustive product classification system, it is expected that data collectors will modify the respective collection tools to incorporate additional distinctions that are needed for expenditure surveys or national accounts purposes. While this approach will likely not impact the higher levels of the aggregation structure that is being created to group and classify the detailed products embodied in NAPCS, it does impact the identification of products and product groups at relatively low levels of the classification.

Using a universe defined by production, there are four main categories of products that flow from the creation and exploitation of IP. The first three of these we characterize as IP-related products:

¹⁵See section 11 in 1993 SNA at (<http://www.unstats.un.org/unsd/sna1993/toclev8.asp?L1=6&L2=7>).

¹⁶See Peter Hill, Intangible Assets, Patents and Copyrights in the 1993 SNA, @SNA News and Notes, issue 6, July 1997.

(1) contract production of IP, (2) speculative production of IP, and (3) leasing/licensing of rights to use IP assets; the fourth category we characterize as IP-derived products. These four categories are defined in terms of production to identify the universe but would be generalized for use in a product classification system that allowed the application of a variety of metrics. A hypothetical application of this approach to a general-purpose product classification illustrates its applicability to both production and expenditure surveys. Hypothetical production and expenditure categories are listed in italics below the general-purpose groupings.

Contract Production of IP

Receipts for R&D services

Business expenditures on R&D services

IP Assets

Receipts from speculative production of IP assets

Business expenditures on IP assets

Purchase of speculatively produced IP assets

Own-account IP assets

Purchase of used IP assets

Licensing (leasing) of IP Assets

Receipts from licensing IP to others

Business expenditures on licenses for IP rights

IP-Derived Products (e.g., computers)

Receipts from the production of computers

Wholesale trade services for computers

Retail services for computers

Business expenditures on computers

Purchase of new computers

Purchase of used computers

Own-account production of computers

This approach could be further refined and applied separately to major classes of IP products. For example, the above could be applied separately to patents and copyrights. Relevant portions could be applied for trademarks. Portions of this general approach are also applicable to other intangible assets, such as franchises. A more refined list of products could also be identified below these generic levels. For example, Licensing (leasing) of Copyrighted Works could be further refined as follows:

Licensing (leasing) of Copyrighted Works

- Licensing the right to use copyrighted originals to create IP-derived products or to produce new IP (such as publishing books or creating new intellectual property in the form of a motion picture)

- Licensing the right to distribute copyrighted works (such as the rights exchanged between a film producer and a motion picture distributor)
- Licensing the right to exhibit, broadcast, or rent copyrighted works (such as the rights exchanged between a motion picture distributor and a movie theater)
- Options agreements (right to look and investigate merits and market potential of a copyrighted work before either buying the work or purchasing a license to use the work)

Similar refinements could be done for Licensing (leasing) of Patents, Licensing (leasing) of Trademarks, or similar refinements of Contract Production of IP and IP Assets. This example is not intended to suggest a structure, but rather to highlight the different types of products that should be separately identified in a product classification system. As long as these products are separately identified, they can be included in a more formal structure as appropriate.

In summary, a production-defined universe determines the categories of IP-related products that must be addressed. Those products can then be aggregated into a more general structure that can accommodate the different requirements of a wide variety of statistical surveys.

Appendix 1: IP-Related Products Identified In NAPCS Work to Date Using Proposed Approach

The development and use of IP creates a variety of products that need to be uniquely, separately, and consistently identified and defined across several NAPCS product lists whose component industries are a significant source of such products. Among the NAPCS product lists most affected by IP transactions are those that cover the products of the following NAICS industries: publishing industries (NAICS 51111, 51112, 51113, 51114, 516); software publishers, internet service providers, web search portals, and computer design and related services (NAICS 51221, 51811, 54151); motion picture and video production and distribution (NAICS 51211-2); record production and distribution and music publishing (NAICS 51221-3); miscellaneous intermediation (NAICS 52391); lessors of nonfinancial intangible assets (NAICS 53311); scientific research and development services (NAICS 5417); colleges, universities, and professional schools (NAICS 61113); and independent, artists, writers and performers (NAICS 71151). The following are examples of specific IP-related transactions identified as products in NAPCS using the production definition:

Speculative Production and Sale of IP

1. Author speculatively produces original book manuscript and transacts outright sale of publication rights to book publisher.
2. Author speculatively produces original book manuscript and transacts outright sale of film rights to movie producer.
3. Movie producer speculatively produces and copyrights film using purchased film rights and transacts an outright sale of film and associated rights to another entity.
4. R&D firm speculatively develops and patents a new product or process and transacts an outright sale of product/process and associated rights to a manufacturer.

Sale/Licensing of Rights

1. Author of original book manuscript licenses a publisher the right to publish book.
2. Publisher buys publication rights to original book manuscript and sub-licenses rights to another publisher to publish book.
3. Movie producer creates original film and sells/licenses wholesale distribution rights licenses to film distributor.
4. Movie producer creates original film and sells/licenses the right to either produce or produce and distribute a foreign version of film to foreign film producer.
5. Movie distributor provides movie film and sells/licenses movie house the right to exhibit film to general public.
6. Movie distributor provides movie film and sells/licenses video rental store the right to rent copies of film to general public.
7. Owner of product patent sells/license a manufacturer the right to either produce or produce and distribute the patented product.

The following are examples of IP-related transactions that are not products in NAPCS using the production definition:

1. Movie producer resells original film rights to book to another movie producer.
2. Book publisher resells original publication rights to book to another publisher.
3. Manufacturer resells original product manufacturing rights to another manufacturer.

Appendix 2: Publishing, Record Production, and Film Production: Why the Products Are Really Different

A. Overview

Publishing industries, record production and distribution (record-label) industries, and the motion picture and video producing and distribution industries are all users and exploiters of creative intellectual property, and the latter two industries are also creators of IP. Book publishers for instance use purchased or licensed rights to original story manuscripts to publish and sell copyrighted copies made from that original manuscript; record producers use purchased or licensed rights to original music to create a copyrighted master original recording and to produce and sell copies made from that master; and movie producers use purchased or licensed rights to original filmscripts or book manuscripts to create a copyrighted master original film. At this point, however, there is a distinct asymmetry between the product that results from exploiting the intellectual property (embedded in the master originals) created by the motion picture and video industries compared to the first two industries. And, this asymmetry has produced a very different articulation of products and definitions provided to NAPCS working groups by representatives of the respective industries.

In short, movie producers primarily exploit their IP through transactions in rights, either outright sale or licensing, while publishers and record producers primarily exploit their IP by producing and selling tangible goods (books, newspapers, records, software, etc) derived from their IP. Although these tangible products may convey to the purchaser with explicit end-use rights statements that circumscribe how the purchaser can use or allow others to use the copyrighted material contained in the medium, the products themselves are nevertheless considered owned by the purchaser. In contrast, under the business model employed by movie producers, not only ownership of the original asset but also all copies of it is typically retained by those producers. Copies of the film are licensed to others for their use only for specified period of time and must be returned to the producers upon expiration of that time. Indeed, according to the Motion Picture Association of America (MPAA), the only filmed entertainment product that is truly sold is home video entertainment, where the physical copy of the video or DVD is sold to the consumer, who can keep it indefinitely, resell it, but not copy or reproduce it. These end-use rights duplicate those that typically accompany (implicitly or explicitly) the sale of publications, recordings, and other tangible products noted above.

B. Additional Perspective

The overview above implies that publishing and record-label industries emphasize the production of published products for sale, while treating the licensing of use rights as products secondary to and separate from publishing and recording products. By contrast, motion picture and video producing industries emphasize not films and programs produced for sale but rather the sale or licensing of rights to use them. This dichotomy between publications and recordings on the one hand and films on the other hand also extends to the products created through the distribution chain. Thus, publishers and record-label establishments typically sell published products either directly to large retail outlets or to wholesalers who sell to retailers who sell to end-users. Under NAPCS, when the wholesaler sells to the retailer, a new wholesale service product is created and when the retailer sells to the end-user, a new retail service product is created. In national income accounts these products are defined and measured as wholesale and retail gross margins. In contrast to the foregoing, when

film producers create films, they are distributed through transactions described not as sales of films to distributors but rather as sales of distribution licenses to distributors, who in turn sell licenses to others (movie houses, television broadcasters, and cable and satellite networks, and video stores, etc) to exhibit the film or rent copies of the film. Videos, however, can be sold or leased to rental stores. Historically, the business model was to sell the videos. More recently, a lease model has also emerged, where the initial cost to the rental store is lower; the distributor and the video store agree to share the rental revenues; and the distributor agrees to buy back some of the excess copies after a period of time.

In the U.S. small motion picture and video producers typically characterize the final product of their production process as either selling outright the rights to productions or as licensing the right to distribute them. Thus, they are engaged in both speculative and own-account production of IP. However, most large motion picture and video producers in the U.S. are integrated producers and distributors. According to MPAA, these firms treat film production as a cost center and treat the licensing of rights to either exhibit their productions or rent and sell copies of them as their final products. As such, they are primarily engaged in own-account rather than speculative production of IP assets. Intriguing then is the basis for the dichotomy between the products described by motion picture and video producers and distributors (NAICS 51211-2) and those described by record producers and distributors (NAICS 51221-2), because in most organizational respects the two industries are apparently quite similar. Specifically, excluding motion picture and video exhibition and postproduction services, both industry groups consist of three types of establishments: independent producers, independent distributors, and integrated producers/distributors, with the large firms tending to be of the integrated type.

For example, the 2002 NAICS manual indicates that NAICS industry 51211C Motion Picture and Video Production consists of establishments primarily engaged in producing, or producing and distributing motion pictures, videos, television programs, or television commercials. And, it indicates that NAICS industry 51212C Motion Picture and Video Distribution consists of establishments primarily engaged in acquiring distribution rights and distributing film and video productions to motion picture theaters, television networks and stations, and exhibitors. Paralleling NAICS 51211, NAICS industry 51221—Record Production consists of establishments primarily engaged in record production, including tapes and CDs. These establishments contract with artists and arrange and finance the production of original master recordings; they also hold the copyrights to the master recording and derive most their revenues from the sales, leasing, and licensing of master recordings. And paralleling NAICS 51212, NAICS 51222C Integrated Record Production/Distribution comprises establishments primarily engaged in releasing, promoting, and distributing sound recordings. While also producers of master recordings, integrated establishments also obtain reproduction rights to copyrighted recordings owned by production companies and other integrated companies. Although record producers generally lack in-house distribution capability, they are nevertheless also engaged in distributing their recordings. Typically, record producers purchase the services (albeit with a licensing arrangement) of either independent record distributors or affiliated large integrated producer/distributors to promote and distribute their copyrighted records. (Similar to small movie and video producers, they also sell outright their speculative original recordings to integrated firms.)

Despite the difference in production process, however, both the producers and integrated establishment in NAICS 51221-2 define their transacted products as recordings not licenses. This is in sharp contrast to movie and video producers who, while they also exploit the distribution capabilities of independent and integrated distributors, describe the product they transact as the sale of a distribution license to the distributing firm. The critical difference between the two industries is in the business model employed by the producers in the two industries; namely, the producers in NAICS 51221-2 do not retain ownership of the recordings derived from their master originals and they buy distribution services from independent and affiliated integrated distributors, while the independent producers in NAICS 51211-2 retain ownership of all film copies derived from their master originals and they sell the right to distribute their works to independent and integrated distributors.

Appendix 3: Intellectual Property, Payments, and Licensing

A. The Relationship between IP Protections, Royalties and License Fees in Balance of Payment System (quoted from Canada's Balance of International Payments and International Investment Position, Concepts, Sources, Methods and Products, Statistics Canada, catalogue no. 67-506-XIE, 2000.)

Royalties and licence fees covers the use of intellectual property rights (the sales of rights themselves are recorded in the capital account). The breakout of royalties and licence fees into the five following sub-categories was implemented from 1990 and goes beyond the provisions of international norms.

Patents and industrial designs covers royalty or licence fees for the use of patents, industrial designs, industrial know-how or manufacturing rights, as well as payments for non-patented industrial processes.

Trademarks covers royalties or fees for the use of trademarks, that is, words, symbols, designs or combinations thereof that distinguish the holder's products or services from those of another provider.

Franchises covers contractual privileges granted by an individual or corporation to another, permitting the sale of a product or service in a specified area or manner.

Copyrights and related rights covers royalty or licence fees for the use of original artistic, literary, dramatic or musical works—for example, to stage productions or performances, or to make recordings or films. These originals or prototypes may take the form of text, data compilations or audio and visual products (such as films or sound recordings) and may or may not be in machine-readable format. *Distribution rights* for performances of completed audio-visual productions are reported with audio-visual services (see section 6.2.2.14). Fees for the replay of recordings or videos are recorded here. Royalties, licences or other fees for the right to use computer programs are reported below in software and other royalties.

Software and other royalties covers software and other computer-related royalties including fees for the right to replicate, distribute or otherwise use software, whether custom or prepackaged. These also cover royalties for exclusive use of natural resources (private sector transactions). From the reference year 1996, licence fees included in the survey value of prepackaged software exports are reclassified here from computer services (see section 6.2.2.5).

B. Licensing of Rights to Intellectual Property

Like a lease, a license is a contract that allows someone to possess and use something with restrictions. IP licenses, however, tend to embody very specific restrictions with respect to exclusivity, duration, place, language, and type of use allowed of the asset under the license. For example, if you lease a television set, you may be granted wide latitude in how to use that set. On the other hand, under a "license agreement" you could be granted only the ability to use the set but not charge others for viewing that television set. Discussed in terms of patents but with applicability to IP assets generally, the U.S. Patent and Trademark Office describes a license agreement as follows:¹⁷

¹⁷ See (<http://www.uspto.gov/web/offices/pac/mpep/documents/300.htm>).

As compared to assignment of patent rights, the licensing of a patent transfers a bundle of rights which is less than the entire ownership interest, e.g., rights that may be limited as to time, geographical area, or field of use. A patent license is, in effect, a contractual agreement that the patent owner will not sue the licensee for patent infringement if the licensee makes, uses, offers for sale, sells, or imports the claimed invention as long as the licensee fulfills its obligations and operates within the bounds delineated by the license agreement.

The patent owner may grant an exclusive license to a licensee. The exclusive license prevents the patent owner (or any other party to whom the patent owner might wish to sell a license) from competing with the exclusive licensee, as to the geographic region, the length of time, and/or the field of use, set forth in the license agreement. A license is not an assignment of the patent. Even if the license is an exclusive license, it is not an assignment of patent rights in the patent or application.

B.1 Technology Licensing (quoted from Robert C. Megantz, How to License Technology, John Wiley & Sons, Inc., New York, 1996.)

One can think of three discrete species of licensed rights: businesses, products, and technologies. Business transactions, which are usually outright sales or assignments, are those situations where a going concern with manufacturing, sales and marketing, established customers and channels with a revenue and profit history, and all the other elements necessary to operate as a stand-alone entity are being transferred. "Products" licensing relates to those license transactions that enable the buyer to duplicate the making of some device, system, or service that has already been completed and proven by the seller. In this situation, the buyer will need to provide the necessary surrounding business assets to realize a profit from the license. The term "technology agreements," on the other hand, commonly is used to designate transactions for pre-commercial designs and data, normally without the evidence of large-scale manufacturability or even a single legitimate customer. In some cases, the final or best formulation has not yet been established. Another way of thinking of "technology" is as a work product of research and development (R&D). Put yet another way, R&D is a business operation which has as its successful result "technology." Such a R&D work product can range all the way from a raw concept, at one extreme, to the results of many years and many millions of dollars' worth of investigation with comprehensive data books, samples, test results, financial projections, and business plans, as well as outside verification by certification agents and potential customer feedback from trials.

Technology licensing is becoming an increasingly important transaction category but does not have the abundance of tools and experience available to businesses and product transactions. . . . The vehicle of technology transactions is a contract between a seller and buyer, normally a license. Such license conveys technology rights from the licensor, or seller, to the licensee, or buyer. . . . The transaction between buyer and seller is a trade. Sometimes the trade is as simple as money from the buyer in exchange for assignment of a patent by the seller. In most cases, the trade is much more complex. But it is always a trade. . .

Depending on the complexity of the transaction, there can be numerous other agreements accompanying the license. For the transfer of physical assets, such as lab equipment or technology prototypes, there may be a separate purchase agreement. For circumstances where key employees are to leave the seller and join the buyer, normally there will be employment agreements. If the seller agrees to provide subsequent technical assistance to the buyer, there will be a separate services or consulting agreement. If the buyer is going to provide a licensed product to the seller for the seller's use in some other product, there will be a supply agreement. Sometimes, the parties choose to create a separate non-disclosure agreement so that it stands independently of the license. In the case of equity transactions, there are numerous other agreements that are needed related to stock purchase, incorporation, and shareholder issues. The legal details of all such licenses and related agreements are outside the scope of this book.

B.2. Licensing As One of Several Business Techniques (quoted from Technology Licensing: Corporate Strategies for Maximizing Value, Russell L. Parr and Patrick H. Sullivan (eds.), Intellectual Property Series, John Wiley & Sons, Inc., New York, 1996.)

Consider a research company. It has no manufacturing facilities, no distribution capability, and no retail function. It makes its contribution by creating marketable innovations. This company converts its innovations to cash by licensing them to manufacturers. In this case, the mechanism used to convert the firm's assets (the innovation) to cash is a license. Another firm may have innovations as well as manufacturing capability but no ability to distribute or sell to end-users. For a company such as this, the conversion mechanism might be the sale of manufactured goods to a distributor. Equally, the manufacturer could convert its assets into cash through a joint venture with a company that has both distribution and sales capabilities.

The point is that there are several different conversion mechanisms that firms may use to convert their knowledge or services into dollars. The typical list of conversion mechanisms contains a number of possibilities. Sale of the rights to the innovation is the most obvious way of converting knowledge into cash. A second alternative is to license the innovation, thereby retaining the basic ownership but allowing someone else the right to use it. A third alternative is a joint venture with one or more companies. Typically joint ventures are undertaken when the owner of the rights to an innovation has some but not all of the business assets required to commercialize it fully. In this case, the owner may strike agreements for the use of the required business assets owned by one or more other companies. A fourth form of conversion mechanism is the strategic alliance. Strategic alliances are developed when a firm with an innovation and the required business assets does not have access to an adequate market. When this is the case a firm may establish an alliance with a company that has market access or positioning but not give it any rights to the innovation. [Remember] licensing is only one of the ways in which innovators can convert their product or service ideas into cash.

Licensing is already a frequently used and efficient method for leveraging the value of technology. It is used to obtain access to the technology of others and to provide access to one's own technology. It is used as a mechanism for establishing and monitoring joint ventures as well as strategic alliances. Already an important mechanism for converting innovations into profit, licensing will become even more important in the future as companies seek to gain extra value from their store of innovation, their intellectual capital.

Licensing will become a more frequently-used strategic alternative for companies as the more sophisticated of them become aware of its power to help them achieve their business objectives. Look at any corporate mission statement and you will find the seeds of a strategy-based technology licensing program. Mission statements often promise to provide ever-improving products and services to meet the needs of customers. This goal will be increasingly difficult to accomplish if based only on one's own technology. More often, increasingly complex products for increasingly more sophisticated markets will require ever more interdependent technologies and company relationships to develop them. Gaining access to needed technologies will require strong strategy-based technology management programs with licensing as an integral if not a key component.