

# Who is the PHOSITA

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## ABSTRACT

The “person having ordinary skill in the art” (PHOSITA) is regulated in the U.S. patent law, whose functions are to read the patent specification, evaluate the novelty, non-obviousness factor and so on. His role is so important; however, unfortunately there is no clear rule to define this person. Owing to his virtual nature, many controversies will be accompanied with this person when patent rights are in dispute. If we can find some clues to define him/her or to delineate a line for the scope of him/her, that may help us to reduce many issues in the patent practice. In this essay, part I is the historical clues of this person. Part II I will analyze some factors related to him/her based on current U.S. patent regulations. Part III will illustrate the information of the USPTO to recruit new patent examiners. Part IV is a comparative review to the regulations of other jurisdictions about this role in the court. In the final section, part V, I will propose a proper person to act as this virtual role based on the result of the above information and analyses.

Keywords: PHOSITA, patent drafter, patent examiner, patent attorney, non-obvious

## I. The Historic Reasoning behind “PHOSITA”

A “person having ordinary skill in the art” can be found in the landmark case of *Hotchkiss v. Greenwood*.<sup>2</sup> In this case, the issue was related to patent validity. The invention claimed a door knob that had a usual structure and could be made of various materials. The only feature of the invention different from other ones was that the knob was made of clay or porcelain, not of metal or wood.<sup>3</sup> The court held that the invention was plain for “an ordinary mechanic acquainted with the business.”<sup>4</sup> Hence, despite an ordinary mechanic without creativity or skill, he/she would still be able to construct a

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<sup>2</sup> 52 U.S. (11 How) 248, 13 L. Ed. 683 (1850).

<sup>3</sup> *Id.* at 251.

<sup>4</sup> *Id.* at 252-253.

knob by using different materials.<sup>5</sup>

However, the court did not mention which scope or what level of a mechanic could make a knob without testing it.<sup>6</sup> That is, the judges had to set up the standard or scope of the person whose skill level qualified him/her as an ordinary mechanic before making a judgment.<sup>7</sup> Therefore, in the current patent system, there exists this obscure standard, and it takes some measures to define PHOSITA respectively in each case.

Generally, the examiners and administrative patent judges on the Board can be seen “as persons of scientific competence in the fields in which they work,” and their findings are “informed by their scientific knowledge, as to the meaning of prior art references to persons of ordinary skill in the art.”<sup>8</sup> Besides, there is no clear definition to describe this particular person in patent law.

## II. The Related Factors to Define “PHOSITA”

A PHOSITA in patent law is like a reasonable man in tort law.<sup>9</sup> For example, a reasonable person in tort law plays the most critical role in evaluating negligence in injury litigation.<sup>10</sup> Similarly, a person having ordinary skill in the art in patent law is hypothesized to assess the patent validity and infringement claims.<sup>11</sup>

A person having ordinary skill in the art is supposed to have knowledge

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<sup>5</sup> *Id.* at 253, 265.

<sup>6</sup> *Id.*; see also *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696, 218 USPQ 865, 868 (Fed. Cir. 1983) (discussing various factors about ordinary skill in the art, but not specifying an applicable standard of the skill level). If the inventor could prove that the claimed processes of manufacturing knobs were different from those made of general metal or wood knobs, or could prove that clay or porcelain had different features from those of metal or wood, perhaps the inventor could be granted patents at that time.

<sup>7</sup> William H. Francis, Robert C. Collins, James D. Stevens, Andrew M. Grove & Matthew J. Schmidt, *Patent Law*, 418 (6th ed. 2007).

<sup>8</sup> *In re Berg*, 320 F.3d 1310, 1315 (Fed. Cir. 2003) (“As persons of scientific competence in the fields in which they work, examiners and administrative patent judges on the Board are responsible for making findings, informed by their scientific knowledge, as to the meaning of prior art references to persons of ordinary skill in the art and the motivation those references would provide to such persons.”).

<sup>9</sup> See, e.g. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1566 (Fed. Cir. 1987) (“[T]he decisionmaker confronts a ghost, i.e., ‘a person having ordinary skill in the art,’ not unlike the ‘reasonable man’ and other ghosts in the law.”); see also Joseph P. Meara, *Just Who Is the Person Having Ordinary Skill in the Art? Patent Law's Mysterious Personage*, 77 Wash. L. Rev. 267 (2007).

<sup>10</sup> *California v. Beheler*, 463 U.S. 1121, 1125, 103 S.Ct. 3517, 3520 (1983).

<sup>11</sup> See Meara, *supra* note 56.

related to the invention when it is invented.<sup>12</sup> The purpose is to prohibit hindsight.<sup>13</sup> Hence, the PHOSITA has to review the invention based on the skill level of technology at the time of invention.

There are two dimensions in determining who is qualified as a PHOSITA—horizontal and vertical dimensions. The first one is “the scope and content of the prior art,”—i.e., which fields are related to the claimed invention? The scope has to be drawn in advance with a proper boundary. Not all the fields of technology or wide-ranging arts are proper to assess invention fairly. Thus, a certain field related to the claimed invention has to be defined. The second one is “the level of the skill,” —i.e., the extent of ability or capability of PHOSITA. This factor will affect the determination of the non-obviousness and its relevant issues in the patent system. For example, an invention may be obvious to people with higher skill level, but may not be obvious to ones with lower skill level. The following are discussions on these two parts separately.

### **1. The Scope and Content of the Prior Art**

The scope and content of the prior art is an important factor before the determination of the level of the skill in the art can be attained,<sup>14</sup> because there are so many patents and publications existing prior to the invention. Any one or any combinations of the prior techniques can be used as a prior art to raise against the invention if there is no limitation on the scope. Moreover, most inventions are combinations of prior arts and consist of old elements.<sup>15</sup> Obviously, it is easy to combine the relevant or even irrelevant prior arts to render the invention obvious to the prior art. Furthermore, inventors are unable to understand or read all the techniques prior to their inventions, so it is difficult for them to fight against the public with different knowledge during the

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<sup>12</sup> 810 F.2d 1561, 1566 (Fed. Cir. 1987) (“[T]he decisionmaker must step backward in time and into the shoes worn by that ‘person’ when the invention was unknown and just before it was made.”); *see also* 2141.03 Level of Ordinary Skill in the Art [R-08 2012], *available at* <http://www.uspto.gov/web/offices/pac/mpep/s2141.html#d0e209300> (last visited May 1, 2015).

<sup>13</sup> *See KSR Intern. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1742-1743, 167 L. Ed. 2d 705 (2007); *see also Graham v. John Deere Co.*, 383 U.S. 1, 36, 86 S.Ct. 684, 15 L. Ed. 2d 545 (1966).

<sup>14</sup> *See E.I. DuPont DeNemours & Co. v. Monsanto*, 903 F. Supp. 680, 692 (D. Del. 1995) (“[T]he resolution of the issue of infringement is a two-step process. First, a court must determine the scope of the claims of the patent. Then, once the scope of the claims is ascertained, the court must determine whether the defendant’s allegedly infringing activity falls within the scope of the claims. *Id.* Claim construction is a question of law.”).

<sup>15</sup> *See* Howard T. Markey, *Why Not the Statute?*, J. Pat. Off Soc’y, 333-334 (1983) (Author, a Chief judge, Court of Appeals for the Federal Circuit gave a talk on April 26, 1983 at the Chicago Law School).

prosecution.<sup>16</sup>

This factor is also important to the 35 U.S.C. Section 102 and 103 of the Patent Act and is regulated in the MPEP § 2141.01.<sup>17</sup> There are two staged functions in this rule. The first staged function is to define the scope of the “content” under Section 102.<sup>18</sup> Then the content with the defined scope will be raised against the invention under Section 103—for example, the determination of the anticipated and obvious factors.<sup>19</sup>

#### **a. The dilemma of the design of the patent system**

The design of the patent system is to allow use of claims to frame the scope of the patentee’s privilege, not drawings or emblems within the application file. The drawings can clearly demonstrate the claimed invention in physical type, but it cannot exclude other subtle changes based on the claimed invention. Similarly, the best modes in the specification are emblems used to illustrate the results of the claimed invention; however, it cannot list all the examples of the claimed invention.

In practice, patent drafters always draw the broadest scope for the invention as long as they do not touch the bright line of the prior art. They may choose alternative terms to avoid crossing the scope of the prior art unless they think that the claimed invention perhaps will be requested to amend the claims due to office actions. For example, if the scope of the claimed invention with the pre-drawn line is too broad, the invention may touch the bright line of the prior art and may not be qualified to satisfy the requirements of novelty or of non-obviousness. On the contrary, if the scope of the claimed invention with the pre-drawn line is too narrow, or even if it is not over the bright line and can satisfy the requirements of novelty and of non-obviousness, it will shrink the scope of the inventor’s privilege. The pre-drawn line is so important that it affects not only the granting of patents in the period of patent prosecution but also the scope of the privilege in the future. How to write broad claim terms for clients is the main concern of patent drafters who can

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<sup>16</sup> See *General Mills, Inc. v. Standard Brands, Inc.*, 431 F. Supp. 687, 691 (E.D. Tenn. 1977) (“One way to apply the obviousness test of 35 U.S.C. § 103 is to picture the inventor working in his shop with the prior art references which he is presumed to know hanging on the walls around him.”); see also *In re Wood*, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (CCPA 1979) (“[A]n inventor could not possibly be aware of every teaching in every art.”).

<sup>17</sup> Scope and Content of the Prior Art [R-6] - 2100 Patentability; also available at <http://www.uspto.gov/web/offices/pac/mpep/s2141.html#d0e208803> (last visited May 1, 2015).

<sup>18</sup> *Id.*

<sup>19</sup> *Id.*

demonstrate their professional abilities.<sup>20</sup>

Except for the inventor, no one is perfectly able to illustrate the claimed invention, let alone the office personnel of the USPTO. The USPTO officers cannot help but rely on the references cited by applicants if they cannot find the critical features of the claimed invention at first glance. In *DuPont*,<sup>21</sup> the federal judges also relied more on the references cited in the specification to prove the factor of obviousness, even though the search for the other references was a required procedure.

**b. Pre-examination of the claimed invention: determination of the scope and content of the prior art**

**(1) The necessity of determining the scope and content of the prior art**

An initial review of the application is required to ascertain the scope and content of the prior art prior to examining the claims. In *Graham*,<sup>22</sup> the supreme court proposed the non-obvious requirement under § 103 to evaluate the patentability in addition to the other two requirements: novelty and utility. The court found four factual inquiries to outline this new factor: determining the scope and content of the prior art, ascertaining differences between the prior art and the claims at issue, resolving the level of ordinary skill in the pertinent art, and assessing the secondary consideration.<sup>23</sup> However, the court acknowledged that this factor is not easy to determine, so it is amendable and has to be decided case by case.<sup>24</sup> Therefore, this non-obvious factor apparently inherited its nature when it was born.

**(2) The role of a factfinder**

“Whether a claimed invention is unpatentable as obvious under 35 U.S.C. §

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<sup>20</sup> See, e.g., *Johnson*, 285 F.3d at 1057 (Fed. Cir. 2002) (en banc) (“When one of ordinary skill in the relevant art would foresee coverage of an invention, a patent drafter has an obligation to claim those foreseeable limits”).

<sup>21</sup> *DuPont*, 903 F. Supp. 680 (D. Del. 1995).

<sup>22</sup> *Graham v. John Deere Co.*, 383 U.S. 1, 86 S.Ct. 684, 15 L. Ed. 2d 545 (1966).

<sup>23</sup> *Id.* at 17-18 (When the former three elements cannot clearly determine whether the requirement of non-obviousness is satisfied, the environmental evidence perhaps can help to illustrate. The secondary considerations are like commercial success, long felt but unsolved needs, failure of others, etc.).

<sup>24</sup> *Id.* (“What is obvious is not a question upon which there is likely to be uniformity of thought in every given factual context. The difficulties, however, are comparable to those encountered daily by the courts in such frames of reference as negligence and scienter, and should be amenable to a case-by-case development.”).

103 is a question of law based on underlying findings of fact.”<sup>25</sup> The court held that judges have the final decision in patentability;<sup>26</sup> however, the temporary determination of the scope and content of prior art has to be done prior to the fact finding. That temporary determination contains the nature of

legal decision. For example, measuring the length of materials can be compared to assessing the claimed invention whether it satisfies the requirement of obviousness or not. A ruler generally has a definite scale to measure the length of material. There will not be any difference for anyone who uses a standard rule with a definite scale to measure the material. However, in the patent system, there is no fixed or standard “ruler” to measure the claimed invention.<sup>27</sup> Especially, the scale of the ruler has to be established prior to measuring the claimed invention every time.

However, as to the examination of patents, both steps are always finished by the same person: examiner(s), or the jury, or judges at the same time. That is to say, the standard of assessment and the scope of the search for the prior art based on the standard are set up at the same time. Those persons simultaneously play conflicting dual roles, like a referee and a player, in evaluating the patentability.<sup>28</sup> To some extent, the decision on whether there is obviousness or not is not as objective as the novelty factor. In addition, this initial and important decision primarily falls on the patent office (PTO) examiners, even though it is dynamic and can be amended by judges when the claimed invention is brought to the court.<sup>29</sup>

The United States Patent and Trademark Office (USPTO) officers act as critical factfinders in this stage.<sup>30</sup> Their main responsibilities are to accumulate the evidence and propose the rationale to support the determination whether the claimed invention meets the requirement of non-obviousness or novelty.<sup>31</sup> Nevertheless, the factfinders are not limited to the examiners of the USPTO, but also to the jury and judges.<sup>32</sup>

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<sup>25</sup> See *Okajima v. Bourdeau*, 261 F.3d 1350, 1354 (Fed. Cir. 2001); see also MPEP § 2141 (“It must be remembered that while the ultimate determination of obviousness is a legal conclusion, the underlying Graham inquiries are factual.”).

<sup>26</sup> See *Markman II*, 517 U.S. 370 (1996).

<sup>27</sup> The answer to “What standard should be employed” at this step is like a question of *vicious circle*.

<sup>28</sup> James L. Wamsley, *A View of Proposed Amendments to Patent Reexamination through the Eyes of a Litigator*, 36 IDEA 589, 592-593 (1996).

<sup>29</sup> PTO examiners usually amends their prejudice after reading some of the references during the initial search and change the presumed features or keywords related to the claimed invention to make another new search for the prior art.

<sup>30</sup> See MPEP § 2144.

<sup>31</sup> *Id.*

<sup>32</sup> *Id.* at 1355 (Fed. Cir. 2001) (“[T]he level of skill in the art is a prism or lens through which a

### (3) The search of the scope and content

Besides inventors, patent drafters should be secondary in knowing the essence of inventors' ideas and the relevant prior arts. A good patent drafter always searches for the prior art and then defines the boundary between the prior art and the invention prior to drafting the patent specification.<sup>33</sup> Without pre-defining the scope of the prior art, the invention cannot be drafted in the broadest terms to acquire the broadest scope of patent privilege. In addition to the patent specifications, it is requested that references of the prior arts be sent to the USPTO.<sup>34</sup>

USPTO examiners have to review the differences between the prior art and the claimed invention to confirm the factors of novelty and non-obviousness according to the proper line separating the invention from the prior art. The proper line is supposed to be the line that is proposed by patent applicants. To determine the scope and content of the prior art, the examiner has to review claims—including the specification, which is disclosed and claimed by the patent applicant—to understand what the applicant has invented.<sup>35</sup> Even if the technology is very new or rare, the examiner is supposed to understand it completely.<sup>36</sup> Then he/she has to define the subject matter and the features of the invention for subsequent review.<sup>37</sup>

The scope of the invention is supposed to be clearly defined in claims that will be interpreted in the broadest way,<sup>38</sup> unless there are exceptions, such as estoppel in the prosecution.<sup>39</sup> Later the examiner has to deal with “how to

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judge [or] jury ... views the prior art and the claimed invention. This reference point prevents these factfinders from using their own insight or, worse yet, hindsight, to gauge obviousness.”).

<sup>33</sup> Hal Milton, *Patent Preparation Mandated By the Law*, 89 J. Pat. & Trademark Off. Soc'y 809, 810 (“[T]he prior art establishes the meters and bounds of the claims, particularly the broadest claim 1, and without that prior art, the drafting of the claims is guesswork and not skill.”).

<sup>34</sup> *Id.* at 809 (“[M]any patent applications are filed without any attention to the prior art and/or without any identification whatsoever of the subject matter of the invention.”).

<sup>35</sup> *See In re Deuel*, 51 F.3d 1552, 34 USPQ2d 1210 (Fed. Cir. 1995); *see also* 2141 Examination Guidelines for Determining Obviousness under 35 U.S.C. 103 [R-6], MPEP, *also available at* [http://www.uspto.gov/web/offices/pac/mpep/documents/2100\\_2141.htm](http://www.uspto.gov/web/offices/pac/mpep/documents/2100_2141.htm) (last visited June 15, 2008).

<sup>36</sup> *See How to Search*, MPEP § 904.

<sup>37</sup> *See* MPEP § 2141; *see also* *PTO Biotech/Pharma Trends---News To Report, 2nd Annual Patent Law Institute*, 923 PLI/Pat 281, 304 (2008).

<sup>38</sup> *See In re Morris*, 17 F.3d 1048, 44 USPQ2d 1023 (Fed. Cir. 1997); *see also Fiddes v. Baird*, 30 USPQ2d 1481 (Bd. Pat. App. Int. 1993); *see also* MPEP § 904, 2141.

<sup>39</sup> *See, e.g., Cybor at 1460* (“Prosecution history estoppel provides a legal limitation on the application of the doctrine of equivalents by excluding from the range of equivalents subject matter surrendered during prosecution of the application for the patent.”).

search,<sup>40</sup> and determine “what to search for” and “where to search.”<sup>41</sup>

### **i. What to search for**

The scope of search is not limited to the literal elements of claim terms.<sup>42</sup> It also covers the disclosed features and the claimed subject matter that are reasonably anticipated in an applicant's amendment by the examiner.<sup>43</sup> In addition, a preferred search will be focused on the references that provide “teaching or suggestion” even though a rejection of patent is not necessarily based on the combination of the rule of teaching or suggestion.<sup>44</sup> Therefore, the preliminary scope of the prior art is closely connected to the claims and to the examiner’s recognition.

### **ii. Where to search**

The prior art may exist in the field of the applicant's endeavor or another field which is reasonably pertinent to the particular problem with which the applicant was concerned.<sup>45</sup> That is, although the invention is supposed to prevail in one field, market demands will force the variation and perhaps be able to prevail in the other fields.<sup>46</sup>

### **iii. How to search**

The required search includes documents which are disclosed in patents and other published documents; i.e., non-patent publications.<sup>47</sup> The scope of the documents cited is not limited to the state but also covers those in foreign countries.<sup>48</sup> In addition, patent officials should look for all the relevant documents at best in the first search unless it is required to review the amendments to the boundary of the claims in the prosecution.<sup>49</sup> The

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<sup>40</sup> See MPEP § 904.

<sup>41</sup> See MPEP § 2141.

<sup>42</sup> *Id.*; see also Mary Jo Bolding, *Patenting the New Business Model: Building Fences in Cyberspace, United States Patent & Trademark Office Formulating and Communicating Rejections under 35 U.S.C. § 103 for Applications Directed to Computer-Implemented Business Method Inventions*, 636 PLI/Pat 69, 75 (2001).

<sup>43</sup> *Id.*

<sup>44</sup> MPEP § 2141.

<sup>45</sup> *Id.*

<sup>46</sup> *KSR Intern. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1731, L. Ed. 2d 705 (2007) (“When a work is available in one field, design incentives and other market forces can prompt variations of it, either in the same field or in another.”); see also MPEP § 2141.

<sup>47</sup> MPEP § 2141 (“Office personnel should continue to follow the general search guidelines set forth in MPEP § 904 to § 904.03 regarding search of the prior art.”); MPEP § 904.

<sup>48</sup> See MPEP § 904; see also Bolding, *supra* note 42.

<sup>49</sup> *Id.* (“The first search should be such that the examiner need not ordinarily make a second search of the prior art, unless necessitated by amendments to the claims by the applicant in



examiner has to assess the results of the search, and then ascertains which are qualified as the prior arts.

#### **(4) Tagging which one as the “prior art”**

To reserve sufficient time and energy for the review of claims and the specification, the efficient way is to exclude irrelevant documents through initial filtration. Numerous documents will be found after the overall rough search work; however, not all of the documents found are qualified as “prior art” under 35 U.S.C. § 102. Perhaps several of them will be useless and will have to be excluded at the beginning stage. The initial filtration work is to find qualified and valuable documents for future office actions—for example, ascertaining the critical date and inventorship, and then excluding documents irrelevant to the factor of novelty under § 102 or obviousness under § 103.<sup>50</sup>

In summary, the work of finding and determining the “prior art” is completed by the USPTO officers, who establish the primary framework of future actions. The more correctly and clearly the description of claim terms is done, the more understanding the examiner will get. The unequivocal acknowledgement will help to define the proper scope and the content of the prior art of the invention.

In case *E.I. DuPont De Nemours and Co. v. Monsanto Co.*,<sup>51</sup> the court had to determine whether “the Anton patent”<sup>52</sup> was invalid because of obviousness to the prior art. The claimed patent relates to nylon fibers and a process for manufacturing sulfonated, stain resistant, solution-dyed nylon fibers.<sup>53</sup> The purpose of the Anton invention is to avoid acid dye staining the color nylon fibers when they are operated on with colored pigments. The scope and content of the prior art can be recognized that:

(1) Solution dyed nylon was known in the art, and (2) it was known in the art that resistance to acid dye staining could be imparted to nylon fibers either with topical stain-blockers, or by copolymerizing certain materials, such as aromatic sulfonates, with the nylon, as disclosed by Flamand, Crampsey, and Ucci. Accordingly, the scope of the prior art is defined as the art of manufacturing nylon

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the first reply, except to check to determine whether any reference which would appear to be substantially more pertinent than the prior art cited in the first Office action has become available subsequent to the initial prior art search....”).

<sup>50</sup> See Bolding, *supra* note 89.

<sup>51</sup> See *DuPont*, 903 F. Supp. 680 (D. Del. 1995).

<sup>52</sup> U.S. Patent No. 5,108,684 (Issued April 28, 1992).

<sup>53</sup> *Id.* at 719

fibers, including SDN fibers and acid dye stain-resistant fibers. The content of the prior art includes the references cited in the Anton specification and the references considered by the Examiner during the Anton prosecution and reexaminations.<sup>54</sup>

The court relied upon the references cited in the specification and the relevant patented documents to draw the scope of the prior art.

## **2. The level of ordinary skill in the art**

Before the determination of the factor of obviousness of patent application, the court has to determine the level of the person of ordinary skill in the art. In the case of *Environmental Design*,<sup>55</sup> the court held that PHOSITA is not a judge, nor a nonprofessional, nor people who are skilled in the irrelevant arts, nor geniuses in the art;<sup>56</sup> however, the court did not define a fixed standard for this factor. Because its nature is flexible and usually changes according to the invention itself, the PHOSITA's level varies widely in different types of inventions.

If the PHOSITA's level is low, he/she might see the invention as non-obvious.<sup>57</sup> In other words, when a PHOSITA has merely basic education or experience in the art, a trivial invention might be non-obvious based on his/her viewpoint. Vice versa, if his/her level is high, small changes in the invention may be obvious to them. In brief, it is easy for a PHOSITA with higher-level skill to draw several prior art references to anticipate the invention.<sup>58</sup>

There are five reference factors to determine the level of ordinary skill in the art: (1) "type of problems encountered in the art," (2) "prior art solutions to those problems," (3) "rapidity with which innovations are made," (4) "sophistication of the technology," and (5) "educational level of active workers in the field."<sup>59</sup> However, it is not necessary to meet all the factors in every

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<sup>54</sup> *Id.* at 751.

<sup>55</sup> *Environmental*, 713 F.2d 693 (Fed. Cir. 1983).

<sup>56</sup> *Id.* at 697.

<sup>57</sup> *Dystar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356,1370 (Fed. Cir. 2006) ("If the level of skill is low, for example that of a mere dyer, as Daystar has suggested, then it may be rational to assume that such an artisan would not think to combine references absent explicit direction in a prior art reference.").

<sup>58</sup> *Id.* ("[T]he level of skill is that of a dying process designer, then one can assume comfortably that such an artisan will draw ideas from chemistry and systems engineering-without being told to do so.").

<sup>59</sup> *Compare* 2141.03 Level of Ordinary Skill in the Art [R-6], MPEP (Sep. 2007), *with In re GPAC*, 57 F.3d 1573, 1579, 35 USPQ2d 1116, 1121 (Fed. Cir. 1995), *and Custom Accessories, Inc. v. Jeffrey-Allan Industries, Inc.*, 807 F.2d 955, 962, 1 USPQ2d 1196, 1201 (Fed. Cir. 1986), *and Environmental*, 713 F.2d 693, 696 (Fed. Cir. 1983) (The previous

case, but at least one factor can predominate in a particular issue.<sup>60</sup>

**a. Type of problems encountered in the art**

In the case of *GPAC*,<sup>61</sup> the invention was related to the techniques involving in asbestos removal art.<sup>62</sup> Because asbestos would contaminate the environment, it was necessary to prevent asbestos from escaping during the processes. The invention was a method and system to control airborne asbestos contamination when asbestos was removed from a building. The theory in the invention was to create negative pressure to be able to retain the airborne asbestos in an isolated space as it was expelled through the filters.<sup>63</sup> The main issue of the case was whether the techniques of the invention were disclosed in the prior art.<sup>64</sup>

The court found that Board of Patent Appeals and Interferences erred in rejecting the claims based on the asbestos primary and secondary references that disclosed the prior art;<sup>65</sup> however, the prior art was disclosed in the other reference, Whitfield.<sup>66</sup>

The Whitfield patent was applied for in 1962 and issued in 1964. It was a utility patent that was mainly used in clean rooms.<sup>67</sup> This type of space was required to be dust-free and could be found in hospital operating rooms.

In brief, the claimed invention was to solve the technical problems in the prior art when the technique was applied in open areas. That is, the technique was good when it was used in closed areas, but it could not function well in open areas. The inventor modified the old technique to fit different environments; however, this modification to the previous technique was obvious to the person with ordinary skill in the art.

**b. Prior art solutions to those problems**

This factor is usually treated simultaneously with the “type of problems encountered in the art” when the determination of the level of skill is

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version of the MPEP in 2006 had six factors. The deleted one was “the education level of the inventor.”).

<sup>60</sup> *Environmental*, 713 F.2d 693, 696 (Fed. Cir. 1983).

<sup>61</sup> *In re GPAC*, 57 F.3d 1573 (Fed. Cir. 1995).

<sup>62</sup> U.S. Patent No. 4,604,111 (filed May 20, 1985).

<sup>63</sup> *In re GPAC*, 57 F.3d 1573, 1575 (Fed. Cir. 1995).

<sup>64</sup> *Id.* at 1583.

<sup>65</sup> *Id.*

<sup>66</sup> U.S. Patent No. 3,158,457 (filed May 14, 1962) (Whitfield created “an ultraclean room within which high flow rate, continuously circulated air performs a sweeping function over the work area to remove dust from the air.”).

<sup>67</sup> *Id.*

made.<sup>68</sup> It means that the comparison of the prior solution to the invention can demonstrate the merits of the invention.

In *Messerschmidt v. United States*,<sup>69</sup> the subject at issue was a “Helicopter Control Device”, which was used to inhibit the problems of cross-coupling. The prior art solution to the problem was to use a friction device which was not a mechanical design (unsuccessful) but a computer-aided design, to “brake or lock certain axes during movement between the individual axis to solve the problems.”<sup>70</sup> Similarly, the invention also consisted of the same basic elements as the prior art solution to form a locking device; however, it was mechanically designed.<sup>71</sup> The court adopted the testimonies of the experts in the art as to functional and structural differentiation.<sup>72</sup> The seven PHOSITAs have either bachelor’s degrees in aerospace engineering or master’s degrees in mechanic engineering, and all have many of years experience in the art of relevant control design.<sup>73</sup>

### c. Rapidity with which innovations are made

There has been no court applying this factor until now;<sup>74</sup> however, the parties in the court have used the factor as arguments.<sup>75</sup> For example, in *Studiengesellschaft Kohle mbH v. Dart Industries, Inc.*,<sup>76</sup> the court did not accept the party’s arguments that the rapidity of invention could be counted as a factor which leads to “obviousness” in the eyes of the PHOSITA.<sup>77</sup>

In theory, if technology can rapidly reach innovation, it means that perhaps there is no big obstacle to develop this technology. This result also matches the purpose of the patent system. Therefore, some debates about this condition are raised.<sup>78</sup> “Is it proper to grant many patents in this field?” “Will patent grants hinder subsequent developments?” “Is the innovation so

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<sup>68</sup> See, e.g., Meara, *supra* note 56 at 381.

<sup>69</sup> 29 Fed. Cl. 1, 21 (1993).

<sup>70</sup> *Id.* at 33.

<sup>71</sup> *Id.*

<sup>72</sup> See *Id.* at 63-65.

<sup>73</sup> See *Id.*

<sup>74</sup> See also Meara, *supra* note 56 at 281.

<sup>75</sup> *Id.*

<sup>76</sup> 549 F. Supp. 716 (D. Del. 1982).

<sup>77</sup> *Id.*; see also Meara, *supra* note 56 at 281.

<sup>78</sup> See John W. Schlicher, *Biotechnology and the Patent System: Patent Law and Procedures for Biotechnology, Health Care and Other Industries*, 4 U. Balt. Intell. Prop. L.J. 121, 131 (1996) (“If technical change in a particular technology appears to be slow, that is no reason to try to issue more patents to speed it up. Conversely, if technical change appears to be very fast, that is no reason to issue fewer patents to try to slow the pace.”).

obvious to the PHOSITA, because it requires little effort to make an innovation?” In several cases—for example, *Computrol, Inc. v. Lawrence Electronics, Inc.*<sup>79</sup>—the patentee argued that technology with the feature of rapid changes needs more protective means, like the patent system, because it demands its benefit from a monopoly of the market.<sup>80</sup> Notwithstanding, those debates cannot propose apparent evidence to prove the relationship with the patent grants. Therefore, it is proper for the administrative authority not to have prejudice when it evaluates patent applications in this type of technology, but to grant patents based on the requirements of the patent law and relevant regulations.<sup>81</sup>

#### **d. Sophistication of technology**

This factor is mainly related to the suggestion test’s “rule of evidence.”<sup>82</sup> In other words, when the invention is more complex, the detailed description of the specification is essential for meeting the requirement of the disclosure of the patent; otherwise, the disclosure does not contain the content of teaching and suggestion to the other inventors who pursue their inventions in the relevant arts.<sup>83</sup>

In theory, the PHOSITA’s skill level in the claimed art should be higher when the invention is more complex than usual.<sup>84</sup> Especially, when the complexity of technology is higher, it is improper to instruct the jury or nonprofessionals to decide the factual issue during the trial.

Although the court did not mention how to apply this factor, we still can trace the clues in the cases. With a less technologically complex invention, for example, *In re Dembiczak*,<sup>85</sup> the invention at issue was a large trash bag. The bag was made of orange plastic and decorated with lines and facial features. Its appearance looked like a Halloween-style jack-o’-lantern. The only difference between the invention and the prior art was “the application of

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<sup>79</sup> 893 F. Supp. 1440 (D. Idaho 1994).

<sup>80</sup> *Id.* at 1456 (The patentee sought for preliminary injunction and argued that when the technology is in a competitive condition and its changes is very quickly, “any technical advantage may be temporary and fleeting”. Therefore, “exclusivity is necessary” for the inventor to “benefit fully from the competitive advantage that flows from innovation.”).

<sup>81</sup> See Schlicher, *supra* note 125 at 131.

<sup>82</sup> See Christopher Cotropia, *Patent Law Viewed through an Evidentiary Lens: The “Suggestion Test” as a Rule of Evidence*, Tulane Public Law Research Paper No. 06-03 (March 2006), available at <http://ssrn.com/abstract=893965>.

<sup>83</sup> *Id.* (“The more complex the invention, the greater detail and analysis needed for the undocumented suggestion evidence to be ‘admissible.’”); see also Meara, *supra* note 56 at 283.

<sup>84</sup> *In re GPAC*, 57 F.3d 1573 (C.A. Fed. 1995).

<sup>85</sup> 175 F.3d 994 (Fed. Cir. 1999).

the facial indicia to the outer surface of the bag.”<sup>86</sup> The court had to determine whether the invention was obvious or not. She pointed out that the designer and manufacturer of trash bags, who particularly specialized in the ornamental and graphic design of such bags, would not be aware of the prior art and could not combine it into a conventional trash bag to render this invention.<sup>87</sup>

From the above mentioned, it can be inferred that the relationship between the complexity of invention and the level of skill in the art is not so closely connected. That is, the factor of technology in this case is transferred to the factor of “technique or art” in this type of invention. Therefore, even if an invention includes a subtle change in its appearance and no complexity of technology, its patentability is not affected.<sup>88</sup>

To the complex technology or pioneer research and development, the treatment of this factor is much different from the less technologically complex invention. For example, *Mobil Oil Corp. v. Amoco Chemicals Corp.*,<sup>89</sup> the invention at issue is a Zeolites. It has natural and synthetic crystalline forms, which are useful in various applications, including uses in the petroleum industry and many kinds of relevant applications. The initial study started in the 1800s and several subsequent research projects demonstrated its remarkable characteristics. Some companies have added various elements to synthesize new compounds to achieve their applications since the 1990s.<sup>90</sup> Different knowledge is needed to accomplish the synthesis of these new compounds. For example, the analysis of characteristics requires X-ray diffraction techniques and methods of conducting elemental analysis. In addition, the technique of the mass production of these materials is different from that of the lab production; actually, it is more complex.

The facts also showed that workers in this field had either a doctoral degree or a bachelor’s degree with many years of relevant experience. The court, however, thought that a chemist with only a bachelor’s degree and two-year work experience would not match the PHOSITA’s level.<sup>91</sup>

As a result, the proper PHOSITA’s level should be one with a master’s degree.<sup>92</sup> The educational level in this case means the level of qualification.

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<sup>86</sup> *Id.* at 998.

<sup>87</sup> *Id.* at 1001.

<sup>88</sup> *Id.* at 999 (“[T]he best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.”).

<sup>89</sup> 779 F. Supp. 1429, 1442-1443 (D. Del. 1991).

<sup>90</sup> *Id.* at 1443-444.

<sup>91</sup> *Id.* at 1443.

<sup>92</sup> *Id.* (finding that the skill level of PHOSITA should be the average level between bachelor’s degree and doctoral degree).

It can be inferred that the level of skill of the PHOSITA was raised when the complexity of technology was upgraded.

**e. Educational level of active workers in the field**

Persons who are related to the PHOSITA's educational level can be divided into two different groups: one is inventors and the other is active workers. There were several cases using the former factor to determine the PHOSITA's level, such as *Environmental Designs*.<sup>93</sup> However, in the case of *Kimberly-Clark Corp.*,<sup>94</sup> the court found that the PHOSITA was not the inventor.<sup>95</sup> Notwithstanding, the educational level of inventors can serve as an indicative reference to the PHOSITA's educational level, such as *Orthopedic*.<sup>96</sup>

The current version of the Manual of Patent Examining Procedure (MPEP) of the USPTO excludes the factor of educational level of inventors, but includes the factor of the educational level of active workers.<sup>97</sup> Although both the Federal Court and the USPTO have adopted the factor of the educational level of active workers in the field to determine the level of skill in the art, they have no comments on the application to this factor.<sup>98</sup> Moreover, the educational level does not mean that it is necessary for a PHOSITA to have a formal academic degree.<sup>99</sup> Most workers in the accused art go directly to work after graduating from high school and do not pursue a bachelor's degree in their lives.<sup>100</sup> In *Chem. Separation Tech. Inc. v. United States*,<sup>101</sup> the court found that having a formal academic degree could not represent the person who would be viewed as skilled in the art.<sup>102</sup>

Nevertheless, some courts have alluded to the range of educational level in

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<sup>93</sup> *Environmental*, 713 F.2d 693, 696, 218 USPQ 865, (Fed. Cir. 1983).

<sup>94</sup> *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437 (Fed. Cir. 1984).

<sup>95</sup> *Id.* at 1454 (“[H]ypothetical person is not the inventor, but an imaginary being possessing ‘ordinary skill in the art’ created by Congress to provide a standard of patentability.”).

<sup>96</sup> *Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1383 (Fed. Cir. 1983) (“[T]he educational level of the inventor may be a factor to consider in determining the level of ordinary skill in the art, it is by no means conclusive.”).

<sup>97</sup> 2141.03 Level of Ordinary Skill in the Art [R-6], Manual of Patent Examining Procedure (Sep. 2007).

<sup>98</sup> See Meara, *supra* note 56 at 280.

<sup>99</sup> *Penda Corp. v. United States*, 29 Fed. Cl. 533, 573 (1993) (considering the reference to the criterion “education” not only limited to formal education, but also to informal education and practical experience).

<sup>100</sup> *Id.*

<sup>101</sup> 51 Fed. Cl. 771 (Fed. Cl. 2002).

<sup>102</sup> *Id.* at 790.

their judgments. For example, In *Bose Corp. v. JBL, Inc.*<sup>103</sup> the court found that if a person had worked in loudspeaker design for two or three years and “having kept up with current literature and trade magazines to keep abreast of new developments,” he would be supposed to know about the aerodynamics, fluid flow mechanics, and acoustics.<sup>104</sup> He could compete in knowledge with a person who had “a bachelor of science degree in electrical engineering, physics, mechanical engineering, or possibly acoustics.”<sup>105</sup> In *Dystar*,<sup>106</sup> the court further confirmed that a person who only had a high school education might be able to handle non-difficult work; however, he was unable to design better dying procedures.<sup>107</sup>

With regard to the rare technology or pioneering inventions, the educational level of workers in the field is not determinative. For example, the case of *ITT Corp. v. United States*<sup>108</sup> was related to the development of fiber in the 1970s.<sup>109</sup> At that time, there was no such information or relevant courses offered in any college or university.<sup>110</sup> Hence, working in this special field were people with different educational backgrounds, including physics, mechanical engineering, and electrical engineering; their educational levels ranged from high school to master’s degrees.<sup>111</sup>

In addition to the implication of the lower limitation of educational level, some cases have also discussed the upper limitation of educational level. In general, it is improper to see the educational level of a PHOSITA and that of the inventor in the same way. If so, every invention will be seen as obvious to PHOSITAs—not to mention to experts—and will not be patentable.<sup>112</sup> The court also found that users and developers of the arts could be seen as the same group, except in some special fields.<sup>113</sup> For example, people who are engaged in research and development in the modern medical industry are different from

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<sup>103</sup> *Bose Corp. v. JBL Inc.*, 112 F. Supp.2d 138 (D. Mass. 2000).

<sup>104</sup> *Id.* at 154-155; *see also* Meara, *supra* note 56 at 281.

<sup>105</sup> *Id.* at 155.

<sup>106</sup> 464 F.3d 1356 (Fed. Cir. 2006).

<sup>107</sup> *Id.* at 1362-63 (“Designing an optimal dyeing process requires knowledge of chemistry and systems engineering, for example, and by no means can be undertaken by a person of only high school education whose skill set is limited to ‘flipping the switches.’”).

<sup>108</sup> 10 Cl. Ct. 321 (1986).

<sup>109</sup> *Id.* at 331-332.

<sup>110</sup> *Id.*

<sup>111</sup> *Id.*

<sup>112</sup> *Dayco Products, Inc. v. Total Containment, Inc.*, 258 F.3d 1317, 1324 (Fed. Cir. 2001) (interpreting the claims from the viewpoint of the PHOSITA, instead of counsels or experts).

<sup>113</sup> *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1257 (Fed. Cir. 2007) (holding inventors specializing in otorhinolaryngology, clinical development, new drug development or clinical trials and in the research and development of antibiotics with the same skill level).



the people who diagnose patients and prescribe known treatments.<sup>114</sup> That is to say, even if a general practitioner or a pediatrician is able to prescribe the invention drug to treat ear infections, he/she is not qualified to develop the patented drugs without special education or experience as the patent's inventor.

To sum up, the range of educational level varies from the bachelor's degree or its equivalent to the doctoral degree or its equivalent. At the basic limitation, the courts treat the workers having worked in the art for more than two years the same as the persons having formal academic degrees in the art. Similarly, as to the upper limitation of educational level, the court considers PHOSITAs to be specialists having professor-level positions and engaging in special topics at research institutes. The educational level of PHOSITA varies in each invention according to the claimed techniques involved in the invention. Therefore, although the range is wide, the scope in each case is focused on a certain level depending on the invention itself.

### **III. The qualifications of patent examiners of the USPTO**

As discussed above, the definition of PHOSITA is still vague and needs advanced discoveries based on other references. A patent examiner is not equal to a PHOSITA, but he/she is absolutely the best role to help give a clear scope of a PHOSITA because his/her role is so closely connected to the claimed invention during the prosecution.

The academic background of patent examiners can be divided into three main fields—engineering, life science and physical science—according to the positions of the applicants.<sup>115</sup> The first group covers fourteen subfields, including aeronautical, agriculture, biomedical, ceramic, civil, chemical, electrical, engineering physics, general, industrial, mechanical, metallurgical, nuclear, and petroleum engineering.<sup>116</sup> The second group cover five subfields, including biology, microbiology, biochemistry, botany, horticulture, and pharmacology.<sup>117</sup> The third group covers two subfields, including chemistry and Physics.<sup>118</sup> In addition to that above areas of expertise are primarily for utility patents, the other special areas of expertise for design patents are also in demand, such as industrial design, visual design, and so on.

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<sup>114</sup> *Id.*

<sup>115</sup> See Patent Examiner Positions, USPTO, <http://www.uspto.gov/web/offices/pac/exam.htm> (last visited May 1, 2015) (The main job of patent examiners is to determine the scope of the privilege of claimed invention, to research the technologies related to the claimed invention, to communicate with patent practitioners or inventors on the issue of patentability.).

<sup>116</sup> *Id.*

<sup>117</sup> *Id.*

<sup>118</sup> *Id.*

The academic level of an applicant for a position as a patent examiner is required to be at least a bachelor's degree, or equivalent training, or practical experience.<sup>119</sup> For example, an applicant who specializes in microbiology has to complete four years of study and get a bachelor's degree in a relevant major, like biology or chemistry, and is required to have at least 20 credit hours in microbiology, as well as relevant subjects.<sup>120</sup>

With the more complex and practical technology, such as electrical engineering, the USPTO had illustrated the applicants' required qualifications. The qualifications of applicants could be divided into two groups: a degree in professional engineering and a combination of education and experience. The former applicants had to take at least one professional engineering curriculum program which was accredited by the Accreditation Board for Engineering and Technology (ABET) and some advanced courses in five different fields of science or engineering (except for first-year courses), such as physics, mathematics, and chemistry. The latter applicants had to take college-level courses, or have technical experience in specified engineering with enough knowledge of physical and mathematical science and have good understanding of both theory and practice.

#### **IV. Who is involved much more in the work of claims**

Besides the above discussions of the objective standard regarding PHOSITAs, another approach is to find who is closely connected to claims. Of course, inventors are the native mothers of their inventions because they make their ideas come true. However, they do not add legal meanings to their ideas until the claims are expressed in words. Claims are usually written by professional drafters who get information from inventors. A patent drafter can be viewed as a "surrogate mother" because he/she gives the idea a legal sense. The strength or energy of the "baby"—the scope of idea—is temporarily fixed when a patent drafter illustrates the claimed invention in general or specific terms.

The idea does not get its legal position until the application documents are sent to the patent office. The baby is born when the umbilical cord is cut and he/she is isolated from his/her mother, but the claimed invention does not obtain its legal position when the draft is completed. The claimed invention has to be reviewed and revised to satisfy the requirements of the Patent Act when it is filed at the patent office. The review is based on the combination of information

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<sup>119</sup> *Id.*

<sup>120</sup> *Id.*

supplied to patent examiners and their education and work experience. The revision to claims or specification is a result of negotiation between the inventor(s) and examiner, or among the inventor(s), the examiner, and the drafter in patent prosecution. A patent examiner can be seen as an “adoptive mother” of the idea with legal guardianship because he/she can request that the inventor revise the specification or the claims upon the administrative right.

The subsequent arguments over the scope of patent rights are primarily based on the application files and the office actions, which are restricted by the principle of estoppel.<sup>121</sup> This principle forbids inventors from withdrawing the waived rights so that the scope of rights is roughly defined. It can be inferred that the most important roles in determining the initial scope of patent right are played by patent drafters and patent examiners,<sup>122</sup> specifically for patent examiners having the review right.

## V. Other jurisdictional definitions

EPC (European Patent Convention) uses the “problem and solution” approach to determine a PHOSITA; i.e., the technical problem is solved based on the disclosure.<sup>123</sup> The PHOSITA is permitted to combine a primary technique with a secondary technique to solve the problem.<sup>124</sup> As to the complex techniques, such as the genetic engineering, the PHOSITA may form a team to work out the problem.<sup>125</sup> Similar to their U.S. counterpart, the skill or ability of the PHOSITA does not have inventive ingenuity.<sup>126</sup> Besides, the PHOSITA is cautious and conservative, but can adopt known methods related to the art to solve the problem.<sup>127</sup>

In Asia, Japan has similar regulations; however, judges of the Japan Intellectual Property High Court mainly rely on the assistance of technical commissioners who are former patent examiners working exclusively for the JIP court; therefore, the abstract role of PHOSITA is played by one with

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<sup>121</sup> See, e.g., *Cybor*, 138 F.3d at 1460.

<sup>122</sup> See *Johnson*, 285 F.3d at 1057 (Fed. Cir. 2002) (en banc) (imposing a duty on patent drafters to draft broad terms to claim a foreseeable right because they are PHOSITAs who are able to foresee the “insubstantial variation” infringement).

<sup>123</sup> See Lan Muir, Matthias Brandi-Dohrn and Stephan Gruber, *European Patent Law*, 156 (2d 2002).

<sup>124</sup> *Id.* at 156, 192 (quoting T 32/81-OJ 1982, 225-Five Cail Babcock).

<sup>125</sup> *Id.* at 156 (quoting EPO T 460/87-CLBA 1996-VISCOSUD); at 192 (quoting T 60/89-OJ 1992, 268-Harvard). See also M.J.W. Atchley, *European Patents Handbook : Including Patent Cooperation Treaty Material / Chartered Institute of Patent Agents*, 3/50 (quoting T 60/89 and T 301/87).

<sup>126</sup> *Id.* at 192.

<sup>127</sup> See Atchley, at 3/49.

expertise.<sup>128</sup> Taiwan has a similar system as that of Japan.<sup>129</sup>

Similarly, Germany has established its Federal Patent Court, which introduces technical judges into patent litigation.<sup>130</sup> This specialized court is set up to improve the uniformity and consistency of court decisions in patent disputes.

## VI. Conclusion

Through the analysis of several factors related to the PHOSITA, we can find that some factors are properly defined as “PHOSITA” in specific cases. For example, a PHOSITA is not required to have a high academic degree or to understand all related knowledge, but he/she must at least have a basic education, such as the level of high school. In addition, he/she should have some profound understanding of the techniques at issue, and be able to compete with the people with bachelors or higher degrees. Nevertheless, the PHOSITA has to be defined respectively in each case depending on the nature of the specific technique. That is, it is difficult to give “PHOSITA” a unified definition to apply to all cases.

In addition, we can get a significant impression of the role of patent drafters and patent examiners during the patent prosecution and the patent litigation.<sup>131</sup> If we want to comprehend the abstract definition of PHOSITA and to search for a candidate for a PHOSITA position, patent drafters and examiners are close to embodying the above-mentioned factors and can be objective models of PHOSITAs, except for competitors and infringers of the issued patent.<sup>132</sup>

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<sup>128</sup> See Takuya Ueda, *A Japanese View on Questions raised by Phillips v. AWH Corp.*, <http://www.ip.courts.go.jp/documents/pdf/topics/051118.pdf> (last visited May 1, 2015) (Judge, Japan Intellectual Property High Court).

<sup>129</sup> <http://ipc.judicial.gov.tw/en/> (last visited May 1, 2015).

<sup>130</sup> See Germany Federal Patent Court, <https://www.bundespatentgericht.de/cms/index.php?lang=en> (last visited May 1, 2015).

<sup>131</sup> See John M. Golden, *Construing Patent Claims According to Their “Interpretive Community”*: A Call for an Attorney-Plus-Artisan Perspective, 21 Harv. J.L. & Tech. 321 (proposing that claim construction is governed by the patent attorney or agent who can access to the knowledge of PHOSITA).

<sup>132</sup> See Rebecca S. Eisenberg, *Obvious to Whom? Evaluating Inventions From the Perspective of PHOSITA*, 19 Berkeley Tech. L.J. 885 (proposing that patent examiners, former technology practitioners, are the objective role to review the obviousness factor by the assistance of current outside technology practitioners). *But cf.* Toshiko Takenaka, *A Person of Ordinary skill in the Art and the Extent of Patent Protection*, Festschrift für Jochen Pagenberg 81 (2006) (proposing that Circuit court marginalizes the role of a PHOSITA by applying a teaching-suggestion-motivation rule to assess the non-obviousness factor).