Crisis-Critical Intellectual Property Findings From the COVID-19 Pandemic

ABSTRACT

A pandemic calls for large-scale action across national and international innovation systems in order to mobilize resources for developing and manufacturing crisis-critical products efficiently and in the huge quantities needed. Nowadays, these products also include a wide range of digital innovations. Given that many responses to the pandemic are technology driven, stakeholders involved in the development and manufacturing of crisis-critical products are likely to face intellectual property (IP)- related challenges. To (governmental) decision makers, IP challenges might not appear to be of paramount urgency compared to the many undoubtedly huge operational challenges to deploy critical resources. However, if IP challenges are considered too late, they may cause delays to urgently mobilize resources effectively. Innovation stakeholders could then be reluctant to fully engage in the development and manufacturing of crisis-critical products. This article adopts an IP and innovation perspective to learn from the currently unfoldingCOVID-19 pandemic using secondary data, including patent data, synthesized with an IP road map.We focus on technical aspects related to research, development, and up scaling of capacity to manufacture crisis-critical products in the huge volumes suddenly in demand. In this article, we offer a set of contributions. We provide a structure, framework, and language for those concerned with steering clear of IP challenges to avoid delays in fighting a pandemic. We provide a reasoning why IP needs to be considered earlier rather than too late in a global health crisis. Major stakeholders we identify include 1) governments; 2) manufacturing firms owning existing crisis-critical IP (incumbents in crisis-critical sectors); 3) manufacturing firms normally not producing crisis-critical products suddenly rushing into crisis-critical sectors to support the manufacturing of crisis-critical products in the quantities that far exceed incumbents’ production capacities; and 4) voluntary grass root initiatives that form during a pandemic, often by highly skilled engineers and scientists in order to contribute to the development and dissemination of crisis-critical products. For these major stakeholders, we draw up three scenarios, from which we identify associated IP challenges they face related to the development and manufacturing of technologies and products for 1) prevention (of spread); 2) diagnosis of infected patients; and 3) the development of treatments. This article provides a terminology to help policy and other decision makers to discuss IP considerations during pandemics. We propose a framework that visualizes changing industrial organizations and IP-associated challenges during a pandemic and derive initial principles to guide innovation and IP policy making during a pandemic. Obviously, our findings result only from observations of one ongoing pandemic and thus need to be verified further and interpreted with care.

**EXISTING SYSTEM**

* The literature that investigates IP challenges during times of global crisis appears very limited (see, e.g., [3]). A limited number of papers focus on IP challenges during economic crises, such as the global financial crisis in 2008–2009. During that crisis, strong IP protection was found to be beneficial for companies to recover, e.g., through facilitating collaboration, IP monetization, licensing, and the use of IP as collateral [4], [5]. Another small set of papers actually focuses on global health crises (see, e.g., [6]–[11]).
* Most authors, however, focus on crises that unfold much slower than the current COVID-19 pandemic, such as the HIV/AIDS pandemic. For ending the global HIV/AIDS pandemic, IP rights were found to be a barrier for low-income countries to access HIV/AIDS medicines after they became available [7], [12]. As a consequence, parallel import options and compulsory licensing were introduced at the international level to relax IP restrictions on essential medicines [6], [7].
* Existing literature also studies compulsory licensing [6], [7], changes to patent laws, such as fast track grant procedures [6], “western subsidies” [8], restricted patentability standards, and patent pools involving voluntary nonexclusive licenses among private innovators (e.g., UNITAIDS Medicine Patent Pool) [9], [10]. While these papers undoubtedly discuss topics that are potentially relevant to the COVID-19 pandemic (compulsory licensing has already been enacted by a few countries), findings from those papers must be treated carefully and should not be overly generalized to the COVID-19 pandemic.
* The current pandemic spreads so much faster than the global health crises studied in prior literature. However, two general conclusions can be drawn from prior literature focusing on IP in the context of crises that are very much in line with what is known from extensive economic research on IP and innovation.

Disadvantages

* + In the existing work, the system is not accuracy due to lack of understanding about the corona virus and its early identification.
  + This system does not aim to contribute to the many efforts to contain the pandemic as quickly as possible.

**PROPOSED SYSTEM**

* The proposed system is develop to contribute to filling the knowledge gap concerning IP considerations during pandemics, we deploy an exploratory method
* [13] employing an IP and innovation perspective. One could argue that we treat the COVID-19 pandemic as a single longitudinal case study [14], [15] to make better informed decisions during this, but also future global health crises. Our findings are based on secondary data collected during the ongoing COVID-19 pandemic. The data include publicly available documents, such as news articles, government announcements, press releases, industry reports, and patent data.
* The proposed system also complement our analysis of secondary data with a patent analysis for the severe acute respiratory syndrome (SARS) Corona virus, where we make use of the open patent data sets compiled by Lens.org,1 to enhance our understanding into preventive, diagnostic, and treatment measures. We focus on the broader spectrum of corona viruses to identify patterns from earlier outbreaks that could be applied in the case of SARS-Cov-2.
* We use the data set compiled by Lens.org “Corona virus: Broad Keywords Based Patents” and extract all the related patent information.2 We choose to focus on the keywords to capture a large variety of corona virus-related patents, in a time of high uncertainty, to improve our overall understanding.

**Advantages**

1) Prevention (reducing the spread, including vaccine development),

2) Diagnosis (increase our understanding about the corona virus and its early

identification using test kits or symptom identification), and

3) Treatment (treatment development of the acute respiratory pneumonia

caused by COVID-19, with a preventative vision).

**SYSTEM REQUIREMENTS**

➢ **H/W System Configuration:-**

➢ Processor - Pentium –IV

➢ RAM - 4 GB (min)

➢ Hard Disk - 20 GB

➢ Key Board - Standard Windows Keyboard

➢ Mouse - Two or Three Button Mouse

➢ Monitor - SVGA

**Software Requirements:**

* Operating System - Windows XP
* Coding Language - Java/J2EE(JSP,Servlet)
* Front End - J2EE
* Back End - MySQL