Editorial

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The analysis of intellectual property value plays an important role in managerial economic and business strategy in that it helps to estimate the value of the innovative and productive capacity of R&D. The issue of valuing intellectual property has often received considerable critical attention. Studies on the contribution of intellectual assets to the competitive advantage of firms' have encouraged researchers to reflect on the effectual value of the intellectual property and, consequently, their measurement.

Most of the contributions to intellectual property value assessment can be included in four different categories:

a   those that use the measure of intellectual property value as dependent variable (expressed in terms of technological innovation, benefits of intellectual property rights; trademark)

b   those that adopt particular sampling strategies

c   those that consider the number and type of explanatory variables, i.e., the potential value determinants (rights, benefits, revenues, etc.)

d   those that suggest subjective evaluations of intellectual property value through interviews, and measurements from perceptive observations.

A research gap still exists regarding the theme of patent value and some areas have been little explored and that could be further investigated. There is a lack of both theoretical models and empirical findings to enhance our understanding of:

•   advancing qualitative measurements to be applied easily by firms that cannot access to patent information databases

•   concentrating on the definition of further indicators that refer to patent intelligence and quantify the strategic-technologic positioning of patents

- measuring the business opportunities of the technology or, more in general, the potential value of the patented technology

- determining assessment approaches able to account for the commercial value of the intellectual property and the commercial performance of products and technologies

- proposing management and measurement tools based on intellectual property financial quantities through intangible valuations or firm analyses, based on managers' perceptions

- assessing the strategic positioning of intellectual property using intelligence instruments or the analysis of the competitive landscape.

This special issue aims to collect innovative, original and explorative contributes from different disciplines on intellectual property value encompassing the most different viewpoints and considering different scale:

- research areas concerning technology, innovation, scientometrics, and R&D

- legal value, law standards, and appropriability

- investigations on the patent life-cycle phases, from the invention to the commercialisation

- innovation revenues and benefits of intellectual property

- the importance of the technological distance among invention and the ratio of prior similar patents for newly combined technology elements.

The goal of this special issue is to stimulate the discussion and collect theoretical studies, surveys and applications on the difference of patent value, from trademark law to intellectual property rights, from trade-related aspects to commercial strategies, from strategic to technological value and from managerial insights to innovation benefits and revenues.

The issue is composed of the following three papers that will appear in the following order, as it follows:

1 'Structural condition of combinatorial innovation through patent ability AI analysis'

2 'Efficient retrieval of trademark images from large databases'

3 'Patent ranking indicators: a framework for the evaluation of a patent portfolio'.

The first article 'Structural condition of combinatorial innovation through patent ability AI analysis' by Shirasaka et al. discusses the invention as a combinatorial process, by considering innovation as the results of reconfiguring an invention to obtain a new combination of existing technology elements. In this way, the paper deduces that the existing rate of similar prior patents is important as a quantitative evaluation method using artificial intelligence technology. By evaluating the combinatorial invention process through artificial intelligence technologies, the authors find that a determination because of the existence ratio of prior similar patents is important for newly combined technology elements.

The second paper 'Efficient retrieval of trademark images from large databases' by Nigam and Singh studies the role of trademarks law as the most pervasive amongst all the

intellectual property laws because all the judgments require contemplating the imaginations of the consumers. The paper contributes to the field of trademark image retrieval by proposing a novel retrieval technique that allows a flexible combination of colour, texture and shape features of the image.

The third paper 'Patent ranking indicators: a framework for the evaluation of a patent portfolio' by Cricelli et al. efforts the problem of patent evaluation by considering the patent value through an aggregate perspective. The authors present a new methodology that provides a ranking-based assessment of patents by reducing the qualitative evaluation components and validate the framework through a case study of an Italian company leader in the satellite solution and services field.

Finally, the editors would like to thank the authors who sent manuscripts for review and to thank those who served as reviewers for the papers submitted to the special issue. Then, the editors thank the Editor-in-Chief of the *International Journal of Intellectual Property Management*, Professor Domingo Enrique Ribeiro-Soriano, who approved their proposal to create this special issue and supported them along the way.