

# The value of (partially) invalidated patents

Grants that are found to be partially invalid are often viewed as poor quality. But a deep dive into the data suggests that they still hold considerable value for their owners

By Axel Contreras and Spyros Makris

**D**iscussions about patent quality often revolve around concerns that so-called ‘weak’ patents are being (mis)used in litigation to achieve favourable licensing conditions for the benefit of rights holders. The respective risk is allegedly higher under the bifurcation system practised in Germany, where patent infringement and validity are decided by different courts and, due to the typically longer validity process, an injunction could in principle be granted for a patent that is later declared invalid.

The narrative of weak or low-quality patents is mainly based on the outcomes of nullity proceedings. In simple terms, the full and partial invalidation of patents in such proceedings is considered as an indicator (or even evidence) of low-quality assets and a weak system in general. In Germany, focus has been placed on the purportedly high invalidation rates resulting from proceedings before the German Federal Patent Court.

At first glance, the assumption that invalidity rates reflect low patent quality appears plausible. However, a closer look reveals that this assumption mirrors a rather oversimplified and fragmented view of the issue of patent quality. When putting the figures into perspective, the number of patents that are found invalid is in fact quite small.

This article addresses the question of whether invalidity rates are *per se* a reliable indicator of patent quality, focusing on the German situation. It follows with some general considerations regarding the informative value of invalidity rates in connection with the overall patent landscape. Specific attention is placed on the suitability of partial invalidations as an indicator of low patent quality, with a particular focus on the life expectancy of patents after their partial invalidation.

## Are invalidity rates a reliable indicator of patent quality?

Using invalidity rates as an indicator of patent quality appears, at first glance, reasonable. After all, a patent that has been invalidated either should not have been granted at all (in the case of full invalidation) or should have not been granted with the specific scope (in the case of a partial invalidation). Accordingly, high invalidation rates are deemed to manifest a low-quality system, which eventually requires regulatory intervention.

When referring to invalidity rates as a quality indicator, analysts should always bear in mind that compared to the total number of granted patents, the validity of only a marginal portion of patents granted is

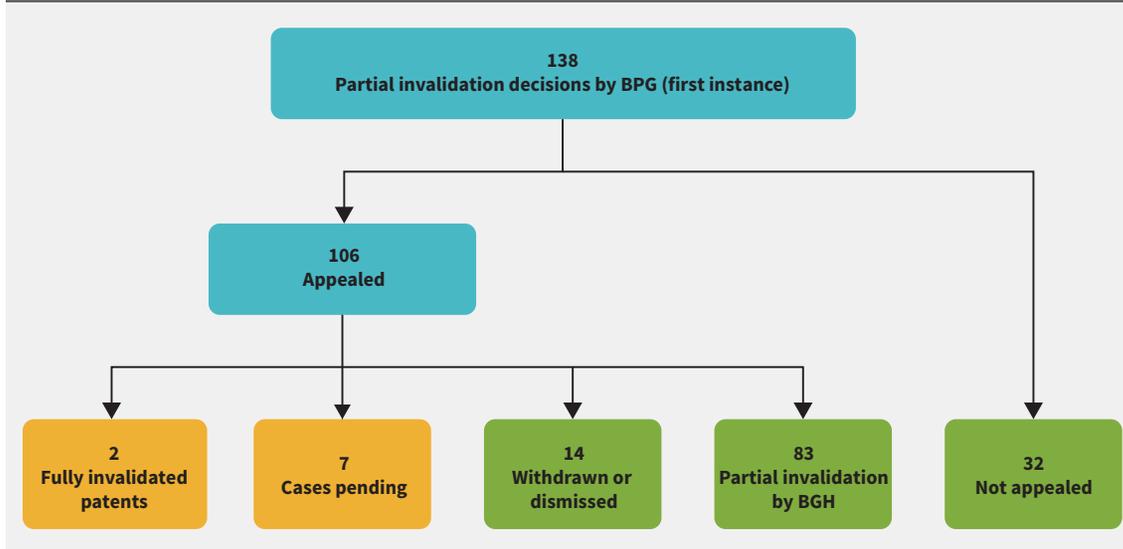
contested. This fact raises doubts about the suitability and significance of invalidity rates as a measure of the quality of the broader patent landscape.

A closer look at the status in Germany reveals that only a small share of the total number of patents in force are subject to nullity proceedings before the Federal Patent Court. For instance, in 2018 approximately 120,000 patents were granted, making for a total of 703,391 patents in force in Germany (considering German patents as well as European patents with a German designation). During the same period, only 217 nullity proceedings were initiated before the Federal Patent Court, according to the German Patent and Trademark Office (DPMA).

One could argue that the reason for the small number of contested patents is that nullity proceedings are, as a rule, initiated as a reaction to the assertion of a patent in infringement litigation. In other words: only a marginal share of the patents in force is contested, because only a small number of patents is litigated; if more patents were asserted, the validity of a higher number of patents would be contested (and more patents would be – fully or partially – invalidated). However, this assumption is not supported by facts. On the contrary, in 2016 Katrin Cremers, Fabian Gaessler and others showed (in a paper in the *Journal of Economic Behavior and Organization*) that the number of validity challenges under the bifurcation system is very low when compared to the total number of infringement cases. Similarly, Thomas Kühnen and Rolf Claessen estimated that the validity of patents asserted in litigation is challenged only in approximately 50% of infringement proceedings (GRUR 6/2013 III).

Looking at the situation in Germany in 2018, approximately 780 new cases were brought before infringement courts (Mathieu Klos, *JUVE*, July 2019), whereas in the same period only 217 new nullity proceedings were initiated (DPMA 2018’s report). The small number of patents to have had their validity challenged in the courts may indicate that in the remainder of cases the defendant did not find evidence of the patent being invalid and therefore decided not to challenge it. Another possible option is that the parties did not want to incur the additional costs of pursuing a claim at a separate court when they have no clear case and are instead willing to reach a settlement. In sum: as only a narrow number of patents in force are litigated and only a small share of the patents in litigation are contested, information from this marginal share cannot be extrapolated to define the quality of the total universe of patents in force.

FIGURE 1. Breaking down invalidation decisions from the German Federal Patent Court



**Partial (in)validation is no indication of low patent quality**

Setting these concerns about the general suitability of invalidity rates for assessing the quality of patents aside, analysts can also question whether the actual data on the outcomes of nullity proceedings justifies the assumption drawn by some authors (eg, Joachim Henkel and Hans Zischka in *The European Journal of Law and Economics*, 2019) that the patent system is flawed in general.

This means that more than half of the cases (over 55%) ended without a decision on the validity of the patent, as the parties had withdrawn the action before the case was decided. This does not indicate low quality of the patent, but merely that the parties were not interested in the decision. On the other hand, in less than one-quarter of the cases the patents were declared fully invalidated.

In this context, it must be pointed out that treating full and partial invalidation as equally significant indicators of low patent quality is misleading. Partial invalidation is very different from full invalidation. If a court decides to restrict one or more of the patent claims, it means that it has also decided to maintain the rest of the claims. This indicates that those claims have been confirmed by two instances: the patent office and the court. Therefore, as Claudia Tapia points out in “Assessing the quality of European patents” (IAM 80), if the infringing product continues to infringe after the decision, then the patent is now of much higher quality. This may be reflected in high value for the patent holder, who has to decide whether to renew the patent by paying maintenance fees.

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Nullity proceedings can end without a final decision being issued on the validity of the patent concerned (eg, when the nullity action is withdrawn). If the Federal Patent Court renders a decision on invalidity, there are three possible outcomes:

- The patent is upheld as granted.
- The patent is fully revoked.
- The patent is upheld with amendments (partial invalidation or partial validation).

In 2018, according to the DPMA, out of 242 nullity proceedings concluded by the Federal Patent Court in Germany:

- 10 ended with the full confirmation of the patent;
- 39 ended with the partial confirmation or invalidation of the patent;
- 59 ended with the revocation of the patent;
- 116 ended with the withdrawal of the action; and
- 18 ended for other reasons, including settlement.

**The life expectancy of a partially invalidated patent**

When a patent is fully invalidated, it has no value for the patent holder. Nevertheless, partially invalidated patents can (still) be valuable for their holders – sometimes even more so than before the partial confirmation. A partially invalidated patent loses some of its original scope but retains claims that may still prove valuable.

The assessment of whether a specific patent is still valuable after having been partially (in)validated requires an individual analysis for each individual case. The amended claims must be scrutinised to determine whether they are still infringed by third-party products or services. Such an assessment is usually performed by the patent holder, because it is not economically efficient to pay maintenance fees for patents that have lost their value. Therefore, a renewal after a partial invalidation

could be considered a good indication that the patent did not lose value in the process.

However, such analysis must consider the context and external factors as well. Generally, patents are re-evaluated immediately after a decision in a validity action. Nevertheless, several factors and circumstances can affect the decision to renew. For instance, some companies with large patent portfolios may only assess patents once a year or every other year, which could delay the decision of whether to renew. The expiration date is also important – once a patent reaches the end of its 20-year lifecycle it cannot be renewed, regardless of its value. In addition, when companies face financial difficulties, they may take drastic decisions not to renew patents even where these could be considered valuable. Considering these circumstances and, in order to provide a reliable indicator of the quality of the analysed patents, this article takes account of whether renewal fees were paid for patents in Germany during the second year after a final decision of partial revocation.

The sample selected here comprises all patents that were partially revoked by the Federal Patent Court at first instance between 2010 and 2014. The sample includes European patents with a German designation, as well as German patents.

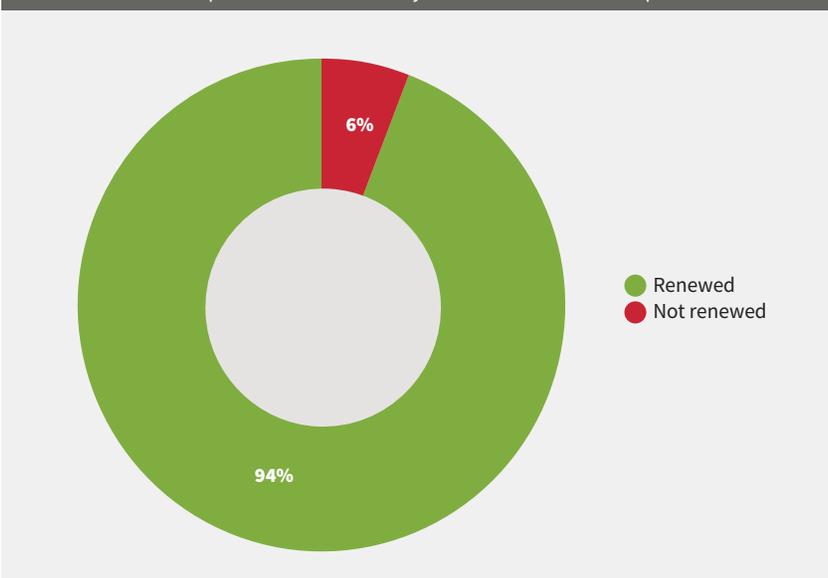
The reason for choosing this timeframe is that several years are needed to obtain information that is reliable and final. Some of the studied first-instance decisions were appealed, and the German Federal Court of Justice (BGH; second instance) reversed or remanded them. Appeal procedures can take a long time to be decided, as indicated by the seven cases that are still pending (see Figure 1). After the appeal decision, at least two more years are needed to obtain information about the payment of the maintenance fees.

From a total of 138 partial invalidation decisions by the Federal Patent Court, 106 were appealed while 32 were not. Out of the 106 appealed cases, 83 also resulted in partial invalidation of the patent. This does not mean that the first-instance decision was upheld, but merely that the final result was also a partial invalidation of the originally granted patent. Fourteen cases were dismissed or withdrawn before there was a final decision by the BGH, while seven cases were still pending as of September 2019. In two cases, the BGH decided to fully invalidate the patent (see Figure 1). All things considered, this amounts to a total of 129 final decisions of partial invalidation (32+ 83+14).

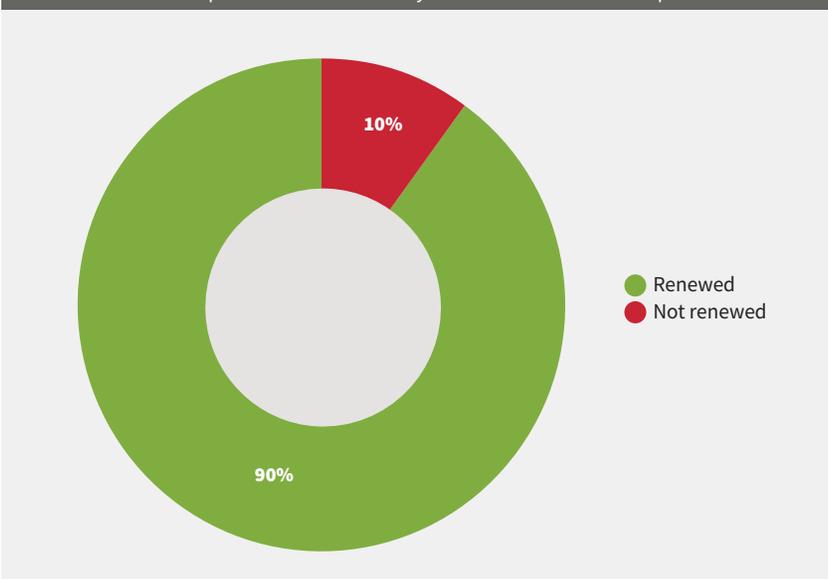
After identifying all 129 patents with a final decision of partial invalidation, we assessed whether renewal fees were paid for those patents after the decision. The date of the latest payment was compared to the date of the court decision to determine which was more recent. The information was obtained from the DPMA register in the case of German patents, and from INPADOC (the EPO's database of international patent documentation) in the case of European patents. A maintenance fee payment was made for 99 of the patents within the first 12 months after the final decision. For the rest, the lack of a renewal corresponded to the non-payment of a fee (six patents) or to the expiration of the full 20-year term of the patent (24 patents).

Of the patents that did not expire, 94% were renewed after the final decision (see Figure 2). However, the mere

**FIGURE 2.** Renewal of patents within the first year after final decision of partial invalidation



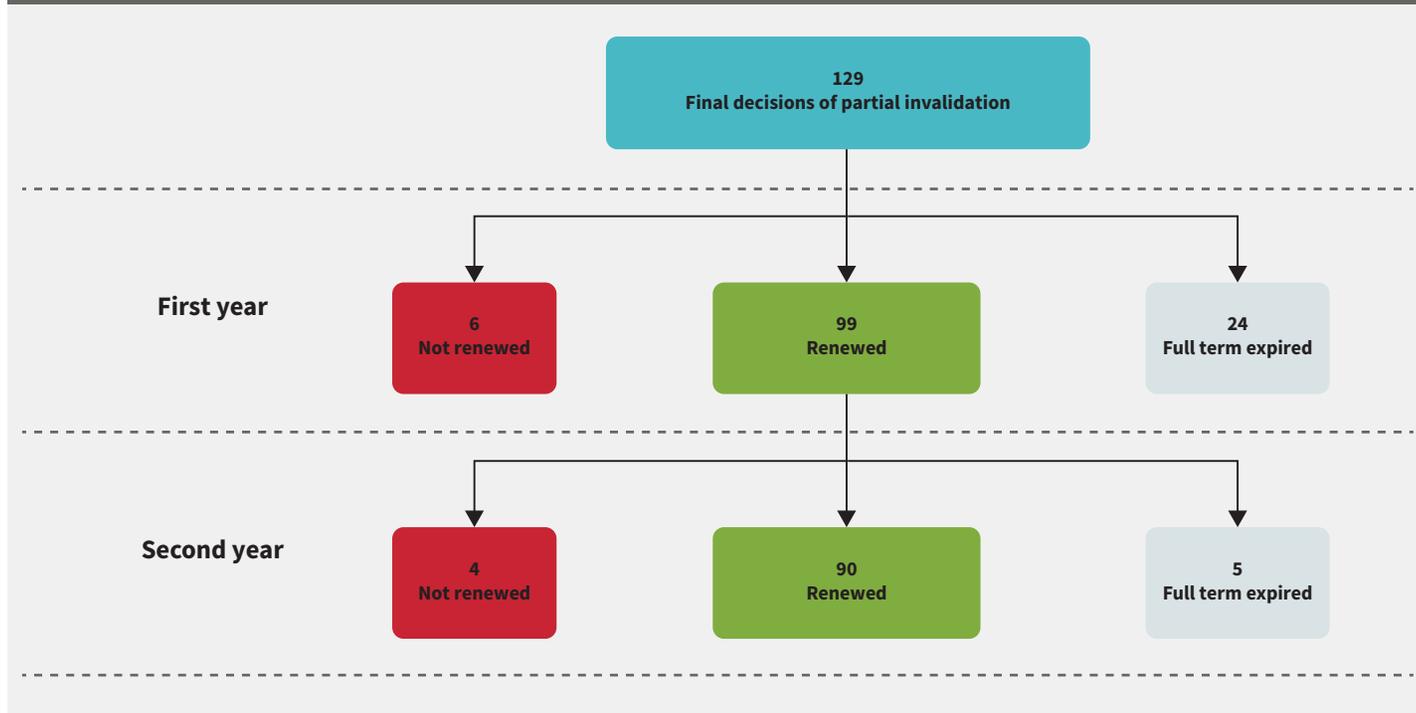
**FIGURE 3.** Renewal of patents for at least two years after final decision of partial invalidation



fact that a maintenance fee was paid after the decision may still not reflect the whole picture. Companies with small patent portfolios can re-evaluate patents immediately after a decision and take appropriate action according to the newly assessed value of the patent, but companies with large patent portfolios usually take longer to react. For a large company, the assessment of whether it is convenient to renew its patents may take place only once or twice a year. If an assessment is carried out in January and the court decision is issued in February, a whole year may pass until the partially invalidated patent is re-evaluated. As a result, information on maintenance fees is more reliable in the second year after the court's decision.

The results show that 90 of the 99 patents renewed in the first year after the final decision on partial invalidation were also renewed during the second year;

FIGURE 4. After partial invalidation decisions



## Action plan



While partially invalidated patents are often perceived to be of low quality, data from Germany suggests that is not the case.

- Whether maintenance fees have continued to be paid is a good indication that a partially invalid patent is still deemed to be valuable.

- Data from Germany shows that 94% of patents that were deemed partially invalid and did not expire were renewed.
- The vast majority (90 of 99) were also renewed in the second year.
- The numbers reinforce the view that Europe's patent system produces high-quality grants.

five expired because the full-term ended and the other four were abandoned because of non-payment. If we consider that a total of 29 patents out of the 129 final decisions of partial invalidation had their terms expiring within the two years following the decision, this means that 90 patents out of 100 (non-expired) partially (in) validated patents were renewed in the second year after the decision (see Figures 3 and 4).

In other words, at least 90% of the partially (in) validated patents were found to be valuable enough for their owners to continue paying maintenance fees for at least two years after the court's final decision. Remarkably, only 10 out of the 129 patents (approximately 7.75%) were not renewed. This means that the percentage of patents that retained their value after the partial invalidation is somewhere between 90% and 92.25%. Also supporting this idea is the fact that the maintenance fees increase with each year that the patent is in force. This yearly increment further reinforces the suggestion that patents which are maintained are still valuable, because maintaining a patent that is no longer valuable while renewal fees increase is not economically efficient for the holder.

## Europe's strong patent system

One criticism against the patent system has focused on the idea that a high number of patents are latently invalid – that is, that there is a significant percentage of patents that should have not been granted but these are not detected because they have not been litigated. Such criticism is based on the cumulative percentage of court decisions reaching judgments of full invalidation and judgments of partial invalidation of the litigated patents – a percentage that was then extrapolated to the whole universe of patents in force. This argument has two main deficiencies:

- It is a fragmented view of the patent universe and does not account for contextual information.
- It blends together the concept of full invalidation and partial invalidation while, in fact, these are very different.

The data shows that partially invalidated patents maintain a legitimate (although narrower) scope and, further, that they are usually perceived as valuable (or even more valuable) to their owners. In nine out of every 10 cases, patents are renewed for at least two years after the final decision of partial invalidation. For this reason, they cannot be considered as equal to fully invalidated patents, which indeed should not have been granted. Moreover, when a comprehensive view of the patent universe is considered, the number of patents that are invalid is very low, thus reinforcing the opinion that Europe enjoys a strong and reliable patent system. iam

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*The views expressed herein are those of the authors alone and do not necessarily represent Ericsson's views. The authors would like to thank Vincent Angwenyi for his valuable input.*