The Circuit Layouts Act 1989 has Teeth

Nintendo Co Ltd v Centronics

by Paul Sugden

Federal Court of Australia
Sweeney J
VG 359 of 1990

Nintendo is a world leader in the home video games market producing computer hardware and software. Centronics imported 'Spica' video game machines, manufactured in Indonesia using a United Microelectronics Corporation's chip made in Taiwan, to compete in the Australia market.

Ninetendo's technical staff became aware of the imports and spent considerable time examining them. They concluded that the picture processing unit ("PPU") circuit layout appeared to be a copy of their PPU circuit layout. On the 31st of August 1990, Nintendo advised Centronics of their intention to institute proceedings for infringement of their EL rights in the nintendo PPU and requested Centronics to cease importing the Spica machines. Centronics approached Spica and UMC, the manufacturers of the chip for further information and clarification of the origin of the circuit layout. Nintendo instituted legal proceedings which were defended by Centronics.

The Law

The *Circuit Layouts Act* of 1989 ("The Act") provides circuit layout manufacturers and designers with a ten year monopoly ownership right to original circuit designs. To 'own' these rights the person or company must come within the requirements outlined in Section 16 of the Act as:

'the person who made an eligible layout as the first owner of the layout rights in it or secondly where a layout is made by a person under the terms of his employment or pursuant to a contract of service or apprenticeship, then the employer is the owner of the circuit layout'.

These statutory presumptions are always subject to modification by Agreement. In the present case the original design was created by two designers in the course of their employment with Ricoh in Japan. This layout was then assigned by written document to Nintendo.

For a circuit layout to obtain protection as an eligible layout under the Circuits Layouts Act it must be original. What is 'originality' for the purpose of claiming protection under the Circuit Layouts Act? The Act does not define what original directly but instead specifies in Section 11 that a Circuit Layout is 'not original' if:

(a) its making involved no creative contribution by the maker; or

(b) it was common place at the time it was made.

In the present case, the originality of the Circuit layout was shown by Nintendo. Through affidavit and oral evidence, the original Ricoh employees explained how they had designed and developed a custom chip to operate the picture processing unit for the AMERICAN system. A team of six people worked for 80 hours per week to develop original masks for the layout. These were

then fed into a computerised assisted device for final processing. However, since Australia and New Zealand operated on a television broadcasting system fundamentally different to the American system, modification of the circuitry was necessary. Ultimately the total process from hand mask to shipping of the mass produced chip took two years.

In concluding on the issue of 'originality' the court considered this aspect from a copyright perspective rather than from a patent perspective of uniqueness, because Ricoh and Nintendo could both demonstrate substantial work, skill and effort had been involved in the development of the Circuit and it was not common place at the time.

Centronics displayed the Spica chip produced by UMC in Taiwan and attempted to show that it had the following differences:

(a) bonding pads and circuitry indicated that the UMC chip has 42 bonding pads providing more power to the circuit;

(b) two extra bonding pads and circuitry were added to the UMC chip including capacitors which provide the substratum bias function for the chip in the absence of a fresh circuit;

(c) the chip included:

(i) formation of the translators for the PAL system in the vertical decoder which controlled the vertical timing of the image on the TV screen;

(ii) extra timing circuitry;

(iii) inter connect metal.

and that the circuitry was unique in being able to operate on both the PAL system and American systems interchangeably.

Centronics submitted that an analysis of these areas showed significant visible differences to justify the conclusion of originality and in the PPU that the Nintendo and the UMC PPU's were substantially different. This was not accepted by the Court who found the changes were insignificant.

In comparing the two layouts, the court considered the 'basic rules' of layouts:

(a) the requirement of the shortest distance between two gates to allow for added speed and performance of duties; and

(b) the requirement of avoiding hot spots - that is too many crossover points.

It also found further evidence that showed the computer assisted device (CAD) merely assisted in drawing the final masks for each layout, and did not design the circuit itself.

Centronics also relied on Section 17 of the Act which states the concepts and principals encapsulated in a circuit layout may be used in further developing circuits or developing a new circuit but the exact layout cannot be copied. A circuit will be infringed if substantial copying of the essential features of the circuit layout has occurred. Reverse engineering a chip will not infringe the rights in the original chip as reverse engineering requires the copier to undertake the steps of the previous inventor in redeveloping the article,

but in a reverse order and so develop their own chip.

The court however found that Centronics was unable to show the circuit layout had been designed independently or reverse engineered. Expert evidence showed that the two chips would operate when swapped between a Nintendo and a Spica unit. The five variations raised by Centronics were classified as minor since they did not alter the actual operation of the circuitry and redundant circuitry had also been copied.

Centronics then sought to rely upon 'the innocent infringer defence' of reverse engineering, outlined in Section 23 of the Act. Section 23 provides that:

'The EL rights in an eligible layout are not infringed:

(a) by making a copy or copies of the layout for the purpose of evaluation or analysing the layout;

(b) by making an original circuit layout based on an evaluation or analysis carried out with the use of a copy or copies referred to in paragraph (a);

(c) by making an integrated circuit in accordance with an original circuit layout referred from paragraph (b); or

(d) by copying or commercially exploiting in Australia an original circuit layout referred to in paragraph (b).'

The onus of proving this defence rested upon Centronics. Centronics argued the UMC chip was reverse engineered by the implementation of a detailed process of examining the Nintendo design and identifying the

well known components of all circuits. This argument did not succeed. The expert evidence showed that the UMC chip was a "shrunk" version of the Nintendo PPU chip and included redundant circuitry. Shrinking is a form of copying whereby the original design is scaled down by computer, and hence no independent intellectual endeavour is input.

Centronics also sought to rely on s20 of the Act, the defence of innocent commercial exploration. Saying Centronics did not know or could not reasonably be expected to have known that the UMC PPU was unauthorised at the time when it acquired the circuit and that it had not become aware at any later time that the circut was unauthorised. The defence only operates so long as the person does not know of the infringement but once notified, the infringer is required to pay the owner equitable remuneration for the commercial use of the circuit.

The Court was of the opinion that Centronics had been put on notice by the letter of the 31 August 1990 from Nintendo's solicitors, and the instigation of proceedings in October 1990.

Further, the letter Centronics received in response to their queries of UMC as to the authenticity of the Nintendo's claim put Centronics on notice that the UMC chip infringed Nintendo's rights. This view is supported by the fact that no emphatic denials were given by UMC in Taiwan to the accusation of copying and no designers were sent to prove the circuit was original at the subsequent court case.

The court held Centronics had known that UMC was not licensed by Nintendo to use the chip. Consequently it could reasonably be ex-

pected to have known the circuitry was unauthorised from the date on which the Act came into operation, being the 1 October, 1990.

Importance of this Case

Nintendo Co Ltd v *Centronics Systems Pty Ltd* is the first case to discuss the extent of copying under the *Circuit Layouts Act* and the requirement of 'originality' for the Act.

The court found that circuit layout protection is similar to copyright protection where originality can be evidenced by the work, skill and effort applied in developing the circuit layout. Furthermore, reverse engineering of a circuit layout will require the infringer to make quite substantial changes to the original circuit in order to avoid an exact reproduction of the circuit layout.

A shrunk version will not be sufficient to be reverse engineered. This is a step towards allowing the advances in technology and knowledge to be used by all parties and does not provide the absolute monopoly which can prevent dissemination of further developments within industry.

This case highlights the effectiveness of the *Circuit Layouts Act* to protect the intellectual property developed in the circuit layout. It is essential to check the ownership of the EL rights and related intellectual property rights prior to importing.

This case has important ramifications for the Spica computer games as the decision may have international ramifications in other countries providing similar protection to circuit layouts. It will be necessary for Spica to design new chips that do not infringe the Nintendo PPU

for distribution to its other international markets where similar legislation is in operation. This case will be used as a precedent in other countries where similar legislation exists and this will damage Spica's markets.

In conclusion, a computer chip has caused an importer and competing producer, to be removed from the market, due to the importer's failure to correctly ascertain the ownership of the intellectual property rights prior to importation into Australia. The ramifications of this case will continue to fuel the debate between intellectual property protection versus free competition.

Whilst the arguments continue, the warning is search before you import. ✍

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Patentability of Computer Programs

by Caterina Cosentino and Rachael Falk

Wang Laboratories Inc's Application
Patents Court
Aldous J
Heard on 21 March 1990
[1991] RPC 463

Facts

This case was an appeal to the Patents Court from a decision of the British Patent Office that two computer related inventions were not patentable. The basis of the decision of the Patent Office was s1(2) of the *Patents Act* 1977 (UK) (the 'Act') which provides that a scheme, rule or method of performing a mental act, playing a game or doing business or a program for a computer is

not an invention for the purpose of the Act. The decision of the Patent Office was made prior to substantive examination of the claims.

The claims in question were for patents in respect of 'an expert system' and 'computer system shell'. In summary, an 'expert system' was a computer programmed to operate to apply information in a particular area in the same way as a human would apply such information. The system operated by storing information in its memory and using the information to ask questions which were then answered by the user with the system asking further questions until enough information has been

supplied to enable conclusions to be drawn. Wang argued that the claim was novel in several ways. In particular, Wang asserted that claim was novel because the logical process used was definition-based instead of rule-based, that is, it contained a hierarchically arranged knowledge base rather than a set of rules.

The claim for the 'computer system shell' was for a conventional computer programmed with the expert system. Wang submitted that this system was unique because it allowed expert information to be retrieved and used for a specific unique purpose. Wang argued that the 'shell' was combined with the program and