

Trek Technology (Singapore) Pte Ltd v FE Global Electronics Pte Ltd and Others and Other
Suits (No 2)
[2005] SGHC 90

Case Number : Suit 609/2002, 604/2002, 672/2002
Decision Date : 12 May 2005
Tribunal/Court : High Court
Coram : Lai Kew Chai J
Counsel Name(s) : Davinder Singh SC, Tony Yeo and Joanna Koh (Drew and Napier LLC) for the plaintiff in Suit 609/2002 and the defendant in Suit 604/2002; Jason Chan and Tan Wee Meng (Allen and Gledhill) for the plaintiff in Suit 672/2002; P Sivakumar and Daryl Ong (P Sivakumar and Co) for the plaintiff in Suit 604/2002 and the defendants in Suit 609/2002; G Radakrishnan (Rada and Associates) for the defendant in Suit 672/2002
Parties : Trek Technology (Singapore) Pte Ltd — FE Global Electronics Pte Ltd; Electec Pte Ltd; M-Systems Flash Disk Pioneers Ltd

Patents and Inventions – Assignment – Nature of agreement to assign rights to invention – Whether plaintiff lawful owner of patent on record – Whether defendant infringers liable to plaintiff for damages – Sections 43, 75 Patents Act (Cap 221, 2002 Rev Ed)

Patents and Inventions – Groundless threat – Whether threat of infringement proceedings groundless – Whether patent infringement actually taking place

Patents and Inventions – Infringement – Website of defendant manufacturer containing links to websites of defendant importer and defendant distributor where purchase of allegedly infringing device possible – Whether such network amounting to offer to dispose – Whether defendants conspiring to infringe patent – Whether defendants acting in furtherance of common design to infringe patent – Whether infringement innocent – Sections 66(1), 69(1) Patents Act (Cap 221, 2002 Rev Ed)

Patents and Inventions – Revocation – Misrepresentation – Whether patent owner misrepresenting ownership or inventorship of patent – Whether misrepresentation material to grant of patent – Whether patent should be revoked – Section 80(1)(f)(ii) Patents Act (Cap 221, 2002 Rev Ed)

Patents and Inventions – Validity – Novelty and inventiveness – Whether patent invalid for lack of novelty and inventiveness

12 May 2005

Judgment reserved.

Lai Kew Chai J:

Trek

1 Trek Technology (Singapore) Pte Ltd ("Trek") filed two actions (Suits Nos 609 and 672 of 2002) against the following defendants:

- (a) FE Global Electronics Pte Ltd ("FE Global");
- (b) Electec Pte Ltd ("Electec");
- (c) M-Systems Flash Disk Pioneers Ltd ("M-Systems"); and

(d) Ritronics Components (S'pore) Pte Ltd ("Ritronics").

M-Systems manufactures and sells a portable data storage device that is marketed as "DiskOnKey" ("DOK") and "Diskey" ("Diskey"). Electec is the exclusive Singapore importer of Diskey. FE Global is the exclusive Singapore distributor of Diskey. Ritronics manufactures and sells the storage devices known as "SlimDisk" ("SD") and "BioSlimDisk" ("BSD"). Another action was commenced by M-Systems against Trek for threatened patent infringement (Suit No 604 of 2002). All three actions were consolidated and heard together. The crux of the actions concerned various infringing acts alleged to have been committed by the defendants in relation to Trek's patent No 87504 (WO 01/61692) in Singapore ("the Patent") in respect of Trek's data storage device known as "ThumbDrive" ("ThumbDrive"). In what has become the common response of defendants to infringement proceedings, the defendants challenged the validity of Trek's patents and cited prior art to substantiate the alleged lack of novelty and inventiveness. The defendants also alleged that Trek had made material misrepresentations to the registrar of patents over the issues of inventorship and ownership.

Trek's storage technology

2 Trek invented a portable mass storage device designed to be as portable and compact as the conventional floppy or CD-ROM storage media. Trek's storage device boasted a capacity that far exceeded that of other mass storage devices. The following are reproduced images of the ThumbDrive:

□ □

3 The ThumbDrive can be inserted into any universal serial bus ("USB") socket, and become fully integrated with another device, typically a personal computer ("PC"). It offers users the advantages of universality (achieved by the integration of a USB plug for direct connection into any corresponding socket of a PC); compactness (a small convenient form factor); portability (no additional power supply is needed, resulting in greater mobility), ease of use (it is "hot-swappable"; ie a user can freely insert or remove the ThumbDrive without first having to turn the PC off); and cost-effectiveness (it is affordable).

4 Experts have testified that the ThumbDrive was an exceptional and distinctively new solution over existing conventional data storage devices. They are also impressed by the ThumbDrive's unique implementation and how elegant the solution is. The ThumbDrive is a casual appendage to a PC, and differs from other devices in that it is not permanently mounted inside a PC, or inserted into a "special purpose" slot like the PCMCIA slot for interaction with the machine. The conspicuous absence of an intervening cable also sets the ThumbDrive apart from other storage devices. Trek also drew my attention to positive responses from the industry, where the ThumbDrive has been heralded as, *inter alia*, a "groundbreaking product". It has also been said that this storage solution marked the "beginning of the end" of floppy drives (see <www.techwarelabs.com>).

The Patent

5 Trek filed an application on 21 February 2002 to register a patent in Singapore for its ThumbDrive. A week later, the ThumbDrive was launched at the CeBIT 2000 exhibition in Germany. Subsequent applications have been filed in over 30 countries. Patents have been granted in the UK, New Zealand and South Africa.

6 I now turn to the patent specifications.

Patent specifications

7 Section 113(1) of the Patents Act (Cap 221, 2002 Rev Ed) is the starting point. It states:

For the purposes of this Act, an invention for a patent for which an application has been made or for which a patent has been granted shall, unless the context otherwise requires, be taken to be that specified in a claim of the specification of the application or patent, as the case may be, as interpreted by the description and any drawings contained in that specification, and the extent of the protection conferred by a patent or application for a patent shall be determined accordingly.

8 In establishing the parameters of the Patent, under s 113 the court is confined to an interpretation within the “ringfence” of the claim of the specification of the Patent, with reference to the description and any drawings within the specification.

9 The Patent relates to a portable data storage device for a computer. The description of the state of the art in the field is set out in the Patent as follows:

Conventional data storage devices generally fall into two categories. The first category is electronic, solid-state memory devices such as read only memory (ROM) and random access memory (RAM). These memory devices are generally fitted within the computer. They are not intended to be removable or portable so that they may be used on different computers, for example, to permit the transfer of data from one computer to another computer.

The second type of device is surface based data storage devices in which data is stored, typically, on the surface of a disk or tape. Examples of surface storage devices are magnetic disks and CD-ROMs. Such data storage devices require a mechanical drive mechanism to be installed in or coupled to the computer to permit the data on the storage device to be read by the computer. In addition, such memory devices are limited by the surface area of the storage device, and the combination of the storage device and the drive mechanism for reading data from the storage device is generally bulky and/or delicate due to the moving parts that are required within the drive mechanism and/or storage device.

10 The Patent (in pp 1–2) describes the elements that comprise the invention as follows:

In accordance with the present invention, there is provided a portable data storage device comprising a coupling device for coupling to a computer serial bus, an interface device coupled to the coupling device, a memory control device and a non-volatile solid-state memory device; the memory control device being coupled between the interface device and the memory device to control the flow of data from the memory device to the coupling device.

An advantage of the invention is that providing a portable data storage device comprising a coupling device with an interface device, memory control device and a non-volatile solid-state memory device, it is possible to provide a portable data storage device which may be coupled to a computer having a serial bus port and which does not include moving parts or require a mechanical drive mechanism to read the data from the data storage device.

11 The Patent makes many references to the device being plugged into the computer’s USB port. For example:

Figure 1 shows a data storage device 10 which includes a USB plug 1 which is coupled to a USB

interface device 2.

...

The device 10 described above is for coupling to a universal serial bus (USB). However, the plug 1, the interface device 2 and socket 8 could be for use with any appropriate computer serial bus. For example, the device 10 could be modified for use with IEEE 1394 (Firewire) protocol by substituting the USB plug 1, USB interface device 2 and socket 8 with a Firewire protocol compatible plug, interface device and socket respectively.

An advantage of the device 10 described above is that it provides a portable data storage device for a computer which does not require a mechanical operated reading/writing device. In addition, the device 10 has no moving parts. This enables [the] data storage device 20 to be more compact than conventional portable data storage devices.

12 Figure 1 of the Patent, which is reproduced below, shows a block diagram of the portable data storage device. The actual components have been placed against each corresponding element described in the specifications and which have been shown in an assembled form (numbered as "10" in the diagram).

□

Figure 1

13 The above descriptions and specifications should inform the skilled addressee of the workings of a portable mass storage device with an integrated plug for direct connections to the USB socket of a PC, without the need for an intervening cable. The ThumbDrive sits as a compact, portable and easily accessible appendage to the PC.

14 On a purposive construction, claim 1 of the Patent discloses a portable data storage device *without* any cable. It has an integrated USB plug. Trek's expert, John Hyde, prepared a video presentation which assisted the court in understanding the Patent. It was helpful. According to Mr Hyde, the skilled addressee will understand the Patent to disclose the following:

[A] portable memory device having an integrated USB plug for directly connecting to the USB socket on a computer without an intervening cable. No mention is made anywhere of a connecting cable. To the contrary, the ThumbDrive patent highlights the portability, compactness and durability of the device. Each component of the invention and how each relates to one another, have been clearly disclosed.

15 Another expert, Prof Kim, opined that the Patent disclosed a small, compact device with an integrated USB "A" plug.

16 The defendants offered a different interpretation of what the Patent disclosed. Their expert, Mr Shimon Shmueli, accepted that the Patent discloses a storage device that has a USB coupling and driver. However he disagreed that the coupling device in the Patent was in the form of an integrated USB "A" plug without any intervening cable. His reasoning was that since USB specifications speak of only two types of connections (captive and detachable cables), the Patent must be assumed to disclose either a captive or detachable cable.

17 I agree with Trek's interpretation that the argument for a captive cable is not supported. Nothing in the Patent could suggest to a skilled addressee the possible inclusion of and need for a captive cable. The D12 driver, identified (and numbered "2") in fig 1 above ("Philips D12 driver"), is shown in Philips' literature to be connected to a USB "B" socket, hence showing the need for a USB socket rather than a captive-cable (attached to the device). Even on a literal reading, there is no mention in the Patent that the device 10 includes a captive cable-connection between the USB plug 1 and the Philips D12 driver. A skilled addressee is unlikely to construe the Patent as disclosing a captive cable when no specific reference is made to it in the text of the Patent. By contrast the prior art patents cited by the defendants all contain direct references to cables.

18 The remaining alternative, which is the disclosure of a detachable cable, is also not supported. The court is asked to hypothesise that the portable data storage device disclosed on the Patent requires the use of an undisclosed, detachable cable which has a USB coupling device at each end. One end has a USB "A" plug, while the other has a USB "B" plug (which will need to be connected to a corresponding socket on the device). This is illustrated as follows:

□

USB "A" and "B" plugs – Cable with two USB coupling devices

19 To sustain this interpretation, the skilled addressee will have to interpret the specifications to disclose the need for (a) a USB cable; (b) the cable having different USB plugs at the two ends; and (c) the presence of a USB "B" socket on the device. I am unable to accept this interpretation. First, there is no reference to any form of cable in the Patent, much less a cable with two plugs. Second, the connector on the device is expressly identified to be a USB plug rather than any other connector. No reference is made to a USB "B" socket.

20 As far as the claims of the Patent are concerned, I am of the view that the skilled addressee would take the view that the Patent discloses a unitary data storage device with an integrated USB plug to enable direct connection to the USB points of computers. Having considered the evidence in its entirety, I am unable to agree with the defendants' suggestion that a skilled addressee would have read into the claims any requirement (whether explicit or implicit) for a cable. I was also referred to instances in the prior art where the requirement of a USB cable was explicitly stated. Equally, if not more, implausible is the interpretation that the portable data storage device disclosed in the Patent requires the use of an undisclosed, detachable cable (with two USB coupling devices: an "A" plug at one end and a "B" plug at the other). This was conceded under cross examination.

21 The skilled addressee would interpret the Patent and conclude that the portable data storage device contains a USB "A" plug that is integrated into the body of the device to form a single, unitary device that can be plugged directly into the USB port of a computer. Numerous references are also made in the Patent to a USB plug that is able to plug directly into and be removed from the USB ports of computers and other devices.

Trek's case of patent infringement

Infringement of the patent claims

22 Before turning to specific acts of patent infringement, I have to consider whether DOK and Diskey (both products manufactured and sold by M-Systems; and distributed by Electec); and SD and BSD (both manufactured and sold by Ritronics) fall within the scope of the Patent. Images of two of

these devices are reproduced below:

□ □

23 Claim 7 of the Patent specifically addresses USB variants of the ThumbDrive solution:

1. A portable data storage device comprising a coupling device for coupling to a computer serial bus, an interface device coupled to the coupling device, a memory control device and a non-volatile solid-state memory device; the memory control device being coupled between the interface device and the memory device to control the flow of data from the memory device to the coupling device.

...

7. A device according to any of the preceding claims, wherein the coupling device comprises a universal serial bus coupling device and the interface device comprises a USB drive.

24 Trek's experts testified that the Diskey, SD and BSD fall within the scope of claim 7. M-Systems does not deny that the DOK and Diskey contain each and every element of the claims of the Patent. When interrogatories were served, it was admitted that the Diskey contains the following elements:

- (a) it is a portable data storage device;
- (b) it includes a coupling device for coupling to a computer serial bus;
- (c) it includes a memory control device;
- (d) it contains a non-volatile solid-state memory device that is a read/write memory device;
- (e) it includes a memory control device and a memory device;
- (f) it contains a micro-controller operating as a memory control device;
- (g) it includes a coupling device comprising a universal serial bus coupling device.

25 In its answers to interrogatories, Ritronics also admitted that the SD and BSD contain each of the elements of claim 7, namely a USB plug for coupling to the USB port of a host computer, an interface device connected to the USB plug, flash memory for read and write functions and a memory control device to control the flow of data to and from the flash memory.

26 Ritronics' BSD contains each of claims 1-7 of the Patent. This was admitted in Ritronics' answers to interrogatories. Even though Ritronics obtained a patent for a fingerprint-access version of the Thumbdrive solution, such a product, even if it incorporates patented concepts (which are under opposition from Trek, who also filed an application for a patent for this solution on 22 March 2002, and obtained the patent on 23 April 2003, preceding Ritronic's application) can in any event infringe the Patent. There was some suggestion that the SD did not contain the write-protect element that is found in claim 5 of the Patent. However this runs counter to answers given in response to interrogatories and testimony presented in the course of the trial.

27 Based on the evidence before this court, there is no dispute that the defendants made, sold

or offered for sale, or kept for disposal in Singapore, devices that were clones of the ThumbDrive. Claims 1, 5 and 7 were infringed by these devices. I now discuss how the activities of the defendants translate into infringing acts under the Patents Act.

Relevant statutory provisions

28 Trek has sought injunctions against the defendants from making, selling or disposing of any of the products that infringed the Patent. These are all acts which may not be carried out without the licence of the patent owner. Section 66(1) of the Patents Act states:

Subject to the provisions of this Act, a person infringes a patent for an invention if, but only if, while the patent is in force, he does any of the following things in Singapore in relation to the invention without the consent of the proprietor of the patent:

- (a) where the invention is a product, he makes, disposes of, offers to dispose of, uses or imports the product or keeps it whether for disposal or otherwise;
- (b) where the invention is a process, he uses the process or he offers it for use in Singapore when he knows, or it is obvious to a reasonable person in the circumstances, that its use without the consent of the proprietor would be an infringement of the patent;
- (c) where the invention is a process, he disposes of, offers to dispose of, uses or imports any product obtained directly by means of that process or keeps any such product whether for disposal or otherwise."

29 Having determined that the various storage devices imported or disposed of fall within the scope of the Patent, I now turn to my findings with respect to the different categories of infringement submitted by Trek. I will preface my findings with the broad observation that there did not appear to be any dispute that DOK and Diskey (both products manufactured and sold by M-Systems; and distributed by Electec); and SD and BSD (both manufactured and sold by Ritronics) were made, launched or sold after the launch of the ThumbDrive at the CeBIT 2000 exhibition in 2000.

Infringing acts committed in relation to DOK and Diskey

30 DOKs (also known as Diskey, which is the name of the DOK sold in Singapore) were manufactured and sold by M-Systems, one of the defendants in this action. The business arrangement for the sale of DOKs showed the involvement of other defendants. Electec purchases DOK from M-Systems. The Chief Executive Officer (CEO) of M-Systems admitted in his affidavit that M-Systems is the supplier of Diskey to Electec in Singapore. Electec then supplies the DOK to FE Global, who then distributes and sells the DOK in Singapore. The CEO of FE Global and Electec confirmed this in his evidence. Invoices from M-Systems to Electec were also discovered in these proceedings to show that Electec imported the Diskey into Singapore. There was also some evidence that Diskey was purchased from a shop called Portable World Pte Ltd. FE Global's name appears on the packaging and on the product registration and warranty card. It was admitted in evidence that FE Global is the "distributing and marketing agents in Singapore for the Diskey product on behalf of [Electec]". FE Global manages a website <www.diskey.com.sg>, in which the Diskey is offered for sale. It is available to buyers in Singapore.

31 Based on the admissions stated above, Trek also alleged infringement on the part of Electec and M-Systems, based on the disposal, offering to dispose, importing and/or keeping whether for disposal or otherwise, of the Diskey product.

Disposal through website dissemination

32 Trek also alleged that M-Systems had offered to dispose of the Diskey product in its website, by placing links through FE Global's and Electec's websites. I do not accept the evidence that each defendant has no control over the links that are made to other defendants' websites. Take the M-Systems website. It has "Singapore" on its list of countries where the DOK is sold. FE Global's name also appears under "Singapore" because the DOK continues to be sold by M-Systems through FE Global and Electec in Singapore.

33 M-Systems' CEO admitted that there was a distribution agreement "of one sort or another" between M-Systems and FE Global, to jointly promote the DOK product. FE Global's/Electec's CEO explained during cross examination that there was a business arrangement between the defendants which provided for mutual linking between the websites of the defendants, pointing to a common enterprise between the defendants to promote and sell the DOK across many jurisdictions, including Singapore.

34 The defendants argued that Trek had not pleaded that the "offer" was made in Singapore. No authority was cited to support the suggestion that the absence of such pleading would be sufficient to defeat Trek's infringement claim. I was referred by Trek's counsel to *Bullen & Leake & Jacob's Precedents of Pleadings* (Brennan & William Blair gen ed) (Sweet & Maxwell, 14th Ed, 2001) at Vol 2 para 64.08, where it was said that the particulars of patent infringement only require the identification of the type of act within s 66 of the Patents Act. Equally tenuous was the defendants' argument that the network of websites did not show that M-Systems had "offered to dispose" in Singapore. They sought to draw an analogy with trade mark law, which requires the use of a sign in a particular jurisdiction where infringement is alleged. Adopting a more practical approach, Jacob J in *Euromarket Designs Inc v Peters* [2001] FSR 20 at [16] said that "there must be an inquiry as to what the purpose and effect of the advertisement in question is". It is clear that if one were to ask the question whether a reasonable user looking at the websites would understand that an offer to dispose of the DOK was being made in Singapore, the answer must, I think, be "yes". It is clear from the evidence that the primary MISystems website provides an avenue for the user in Singapore to purchase the DOK with the link to the FE Global/Electec websites. There is an "offer to dispose" of the DOK in Singapore within s 66(1) of the Patents Act.

Conspiracy and joint tortfeasorship

35 The law on joint tortfeasorship can be divided into two broad categories: (a) where one party conspires with the primary party or induces the commission of the tort; or (b) where two or more persons join in a common design pursuant to which the tort is committed.

36 Trek argued a case of conspiracy to infringe against the three defendants in Suit 609/2002. According to Trek's counsel, all three defendants have links via the other's websites to sell the Diskey product. It was further argued that these mutual links to each other's websites and the defendants' continued supply and sale of the DOK (despite clear notice of the Patent) is clear evidence that there was a conspiracy to infringe the Patent. I do not agree. A party will only be liable for conspiracy to infringe where it actually induces the infringement or there is evidence of an agreement or understanding to carry out acts of infringement: *Electro Cad Australia Pty Ltd v Mejati RCS Sdn Bhd* [1998] 3 MLJ 422; *Ong & Co Pte Ltd v Quah Kay Tee* [1996] 2 SLR 553. A party who sells or offers to sell or dispose of an article knowing that it is going to be used to infringe may assist infringement, but cannot be said – for the purpose of establishing a conspiracy – to have induced it: *CBS Songs v Amstrad* [1988] RPC 567 at 606. Even though MISystems admitted that it gave indemnities to FE Global and Electec, I am not prepared to conclude that the court should automatically infer that

an inducement has taken place with respect to continued acts of patent infringement. The threshold for conspiracy is a high one to cross.

37 Trek also alleged the second category of joint tortfeasorship against the three defendants in Suit 609/2002: where the acts constituting infringement were carried out in "furtherance of a common design". In *Morton-Norwich Products Inc v Intercen Limited* [1978] RPC 501 at 512, Graham J elaborated on the concept of "common design":

As I understand it, persons whose respective shares in the commission of a tortuous act are done in furtherance of a common design are properly regarded as joint tortfeasors: see Clerk and Lindsell on Torts, 14th ed.; page 201, and the references *inter alia* to *The Khoursk* [1924] page 140 per Scrutton L.J. at page 155. It is clear from this that two persons who agree on common action in the course of and to further which one of them commits a tort in this country are joint tortfeasors. There is, as Scrutton L.J. said, one tort committed by one of them on behalf of and in concert with the other.

38 The observation may be made that for parties to operate in furtherance of a common design, it is not necessary for them to have mapped out a plan. Tacit agreement will also suffice: *Unilever Plc v Gillette (UK) Limited* [1989] RPC 583 at 609.

39 Counsel for Trek sought to equate the business arrangement between the defendants as amounting, *inter alia*, to a "common design" for the purpose of establishing joint tortfeasorship. They submitted that the following circumstances support the finding of a "common design":

(a) Invoices from M-Systems to Electec, which show that Electec imported the Diskey into Singapore, including invoices after 17 April 2002, after Trek had put the Defendants on notice of its Patent;

(b) Evidence of the CEO for M-Systems during cross-examination, where he agreed with Counsel for Trek that the DOK was (before and continued after this action) to be sold by M-Systems through FE Global and Electec in Singapore;[\[1\]](#)

(c) Evidence of the CEO for FE Global/Electec during cross-examination, where he agreed with Counsel for Trek that the business arrangement continues up to today and that Electec is still the distributor for M-Systems);[\[2\]](#)

(d) M-Systems had also issued indemnities to FE Global to encourage or facilitate the continued sale of the Diskey in Singapore. The CEO for FE Global/Electec said that the purpose of the indemnity was to enable FE Global to continue selling the DOK.[\[3\]](#)

40 The indemnities issued by M-Systems go some way to disprove the so-called "arms-length" basis of the dealings between the various defendants, as advanced by their counsel. As a result of the indemnities given, FE Global and Electec continue to import and distribute the DOK in the Singapore market. In the event of any damages being awarded against them, FE Global and Electec will be fully indemnified by M-Systems.[\[4\]](#)

41 Having considered the evidence, and the submissions of counsel, I am persuaded that a case of joint tortfeasorship has been made out against M-Systems, FE Global and Electec, based on the furtherance of a common design to infringe the Patent.

Making, sale or offer to dispose by Ritronics

42 As against Ritronics, Trek's pleaded claims of infringement refer to the making, disposal or offer to dispose, importing and/or the keeping for disposal or otherwise, of the SD and BSD. It was also alleged that Ritronics offered these two products for sale on its website <www.ritron.com.sg>. Ritronics denied that these acts constituted infringement of the Patent. There is no merit to this denial.

43 Ritronics' managing director admitted that the SD, which, for all intents and purposes, is an identical copy of the ThumbDrive, was launched or made available in Singapore before July 2002. A webpage printout dated 22 May 2002 clearly informed visitors that SDs were being sold by Ritronics. There was also evidence that in May 2002 a third party was offered a distributorship from Ritronics to export or sell the SDs in Korea. [\[5\]](#)

44 The SD was also exhibited at a computer exhibition and, under cross-examination, Ritronics' managing director admitted that at least 100 SDs were brought to the exhibition, and 20 units were sold. In the course of cross-examination it also transpired that SDs were offered for sale or disposed of to members of the trade, including some retailers. Newspaper interviews were also given, where Ritronics reported that BSDs would debut in July 2002. These activities, together with website announcements (including those on <www.bioslimdisk.com>, registered to Ritronics), were all early advertisements which have been held by the English Courts to be infringements: *Gerber Garment Technology Inc v Lectra Systems Ltd* [1995] RPC 383 at 412. It is no defence for Ritronics to say that the 100 or so devices were sold or disposed of for "evaluation" purposes or for obtaining "technical feedback". In no way does this insulate them from Trek's infringement claim.

45 Ritronics' managing director also tried to move its Singapore operations to a Hong Kong company, Ritech International Ltd ("Ritech"), which is wholly owned by Ritronics. It is not sufficient for Ritronics to argue that Ritech is a completely separate legal entity. The manner in which the operations were moved to Hong Kong and how SDs and BSDs were attributed to Ritech, would lead this court to question whether this course of conduct was designed to deflect liability on the part of Ritronics. The SD and BSD originated from Ritronics. The websites from which the devices are sold or offered for sale, namely <www.ritron.com.sg> and <www.bioslimdisk.com>, were and continue to be registered to Ritronics.

46 Having considered all the evidence, I conclude that Ritronics had made, disposed of or offered to dispose of the SDs and BSDs, or had kept them for disposal, within the meaning of ss 66 and 67 of the Patents Act. Trek has succeeded in making its case for infringement, subject to defences that are available to the defendants, which are discussed further below. Before addressing the prior art, I will turn to a novel application made by Trek during the litigation – to amend the Patent.

Application to amend the Patent

47 The law suits commenced by Trek were unfortunately interposed by an unprecedented application by its solicitors to amend the Patent during the proceedings. As presently drafted, the Patent discloses a portable data storage device (without any cable) that uses an integrated USB plug. On 28 March 2004, Trek applied to amend the Patent, in order to claim and clarify the true nature or extent of the ThumbDrive invention.

48 The proposed amendments were principally to claims 1 and 8 as follows (with changes tracked and underlined):

Claim 1

A portable data storage device which can be directly plugged into a USB socket of a computer and which is operative to function as an alternative to a magnetic disk or CD-ROM, and which is capable of storing software for installation to the computer or of receiving and storing users's data present in the computer and which comprises a coupling device which is a USB plug for coupling directly to a USB socket on a computer, an interface device coupled to the USB plug, a memory control device and a non-volatile solid-state memory device; the memory control device being coupled between the interface device and the memory device to control the flow of data from the memory device to the USB plug.

Claim 1A

A portable data storage device according to Claim 1 that is more compact than a conventional magnetic disk or CD-ROM storage device.

Claim 8

A device according to any of the preceding claims wherein the USB plug and USB socket are replaced by an IEEE 1394 (Firewire) protocol plug and a Firewire protocol compatible socket respectively, and the interface device is a Firewire protocol driver.

Consequential portions on page 8 lines 24-25 to be deleted

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Prior art

49 The above amendments were sought to place sufficient distance between the Patent and five instances of prior art that were raised by the defendants in their challenge to the novelty and inventive step of the Patent. The prior art references are:

- (a) A leaflet published by Aladdin Knowledge Systems Inc ("Aladdin") that shows a USB version of their parallel port software protection key. Aladdin is a leader in the field of Hardware against Software Piracy.
- (b) US Patent No 6088755 ("Sony patent"), which discloses a proprietary interface method (mechanical, electrical and protocol) for allowing data that is captured on one system-type to be retrieved on a different system-type.
- (c) European Patent Application 929043A1 ("TDK patent"), which describes a method of adding a secondary cable-connected interface to a pre-existing PC card. This would enable such an enhanced PC card to be used in systems that did not have a PC card socket.
- (d) Singapore Patent Application No 200203303-3 (derived from PCT application PCT/US00/07087) ("Ban patent"), which discloses a method of building a cable-connected desktop storage device that enables flash modules to be attached via USB and operate as a file storage device.
- (e) PCT Application WO 99/45460 (Estakhri) ("Lexar patent"), which discloses a cable-connected adaptor that allows pre-existing flash modules to be attached to a PC that does not have matching flash sockets.

50 It was apparent that the amendments were sought to buttress Trek's response to the defendants' invalidity claims.

The court's power to amend a patent during infringement proceedings

51 Section 83 of the Patents Act allows for a patent to be amended during infringement proceedings. Limitations are introduced under s 84(3) which states, *inter alia*, that no amendment shall be allowed under s 83 if it (a) results in the specification disclosing any additional matter; or (b) extends the protection conferred by the patent. If the amendments are allowed, then such amendments shall have effect and be deemed always to have had effect from the grant of the patent. Trek's case was that its proposed amendments fell squarely within the parameters set by the Patents Act, and should be allowed.

52 Any amendments must also satisfy base-line criteria in s 25(5) of the Patents Act, which provides, *inter alia*, that the claims are to be clear and concise.

No disclosure of additional matter

53 The English courts have formulated a three-step test to determine whether any additional matter is disclosed by the amendment (in *Bonzel v Intervention Limited (No 3)* [1991] RPC 553 at 574):

- (a) To ascertain through the eyes of a skilled addressee what is disclosed, both explicitly or implicitly, in the application;
- (b) To do the same in respect of the patent as granted; and
- (c) To compare the two disclosures and decide whether any subject matter relevant to the invention has been added by the proposed deletion or addition.

54 The Examiners' Guidelines for the European Patent Office similarly provide (at Part C-VI, 5.4):

An amendment should be regarded as introducing subject-matter which extends beyond the content of the application as filed, and therefore unallowable, if the overall change in the content of the application (whether by way of addition, alteration or excision), results in the skilled person being presented with information which is not directly and unambiguously derivable from that previously presented by the application, *even when account is taken of matter which is implicit to a person skilled in the art*. [emphasis added]

55 As viewed by the skilled addressee, the Patent discloses a portable mass data storage device having an integrated USB "A" plug for a direct connection to the USB socket on a computer without an intervening cable. Trek's patent agents also confirmed on affidavit that what was proposed by the amendments was already disclosed in the Patent; no disclosure of additional matter or extension of protection was sought by this application to amend the Patent. It is also significant that the defendants' expert agreed, during cross-examination, that upon reading the Patent both in its unamended and amended form, a skilled addressee "would conclude that it discloses a USB memory storage device which is compact with an integrated plug".

No extension of protection

56 The evidence has suggested that what is being proposed does not extend the protection

afforded by the Patent, but in fact limits the scope of patent protection, to the extent that the following embodiments are no longer claimed in view of amended claim 1:

- (a) devices which are plugged indirectly;
- (b) devices which do not use a USB plug
- (c) devices which do not function as an alternative to a magnetic disk or CD-ROM
- (d) devices which are incapable of storing software or the user's data.

The amendments are supported by the specifications of the Patent

57 An exercise must also be carried out to determine whether the amendments to the Patent are sufficiently disclosed in the existing specifications. I am satisfied that they are, and reference may be made to the following pages and claims of the Patent:

- (a) "which can be directly plugged into a USB socket of a computer"

Support

- (i) Device described in relation to figure 1 on page 3, lines 21-22;
 - (ii) Page 5, lines 18-20
 - (iii) Page 6, lines 7-8; 16-17
 - (iv) Page 7, lines 21-22
 - (v) Page 9, lines 1-3
- (b) "and which is operative to function as an alternative to a magnetic disk or CD-ROM"

Support

- (i) Page 1, lines 13-22
 - (ii) Page 2, lines 6-11
 - (iii) Description of device as a whole
- (c) "and which is capable of storing software for installation to the computer"

Support

- (i) Page 4, lines 20-23
 - (ii) Page 7, lines 1-22
- (d) "or of receiving and storing user's data present in the computer"

Support

- (i) Page 4, lines 23–25
- (ii) Page 7, line 24 to page 8, line 21
- (e) “A portable data storage device according to Claim 1 that is more compact than a conventional magnetic disk or CD-ROM storage”

Support

- (i) The Patent
- (ii) Page 1, lines 13–22
- (iii) page 2, lines 6–11
- (iv) Page 9, lines 5–9
- (v) Figure 1
- (f) USB plug and socket are replaced by a Firewire protocol compatible plug and socket respectively

Support

- (i) Claim 8 of the Patent
- (ii) Page, lines 1-3

The defendants’ objections to the proposed amendments

58 The defendants objected to the amendments, based on the scope of what the Patent (as filed) discloses. For example, they were of the view that the Patent (as filed) disclosed a device with an integrated plug. The evidence during cross-examination showed that the Patent (as filed) does disclose an integrated USB “A” plug. The objection raised has effectively been rendered academic. The amendments to the Patent would clarify that the Patent excludes embodiments which do not use a USB plug, and to that extent the amendment serves to restrict the scope of the Patent. The defendants also referred to the “socket 8” feature at the rear end of the device disclosed in the Patent. They said that the device would not work if other devices were attached to the socket, but the expert evidence appears to suggest that the device will work notwithstanding the presence of the “socket 8”. In fact, the claims of the Patent do not refer to “socket 8”, and the patentee, Trek, could not have intended to attach much importance to this feature. I accept the evidence of Trek’s expert, that the invention with the “socket 8” feature refers to a device with an integrated plug that forms an appendage to a computer.

59 The defendants also submitted that the Philips D12 driver was *not* indicative that the device in the Patent has an integrated USB “A” plug. But it was precisely the fact that the Philips D12 driver would not, in accordance with the state of the art at the relevant time, have disclosed or pointed to the USB “A” plug, that informs the novelty and innovation of the integrated A plug.

60 It was the defendants’ contention that if a disclosure teaches the use of a broad class of elements, a specific element within that class cannot be claimed. They cited *Flexible Directional*

Indicators Ltd's Application [1994] RPC 207 ("*Flexible*"). In *Flexible*, the application in suit related to a traffic bollard that was characterised by a co-polymer of ethylene and vinyl acetate ("EVA") as the material from which it was made. The scope of the patent as filed was defined by a statement which read, "According to one aspect of the present invention a bollard comprises a hollow body moulded from a compound of ethylene vinyl acetate and at least one other polymer material." During the examination of the application, the applicant introduced amended claims which were rejected by the examiner because it extended the scope of the patent, thus contravening s 76(2) of the UK Patents Act. The Patents Court dismissed the appeal. The application as filed did not disclose that the bollards could be made from EVA alone. It was limited to EVA and another polymer. The application as sought to be amended did extend the disclosure, even though the specific embodiment used EVA and another polymer. The court held that when the claims were considered together with the body of the specification, the skilled man would have known that proportions of the monomers in EVA could be selected to obtain the resilient material and would not have been surprised that EVA alone was claimed as being within the invention. This case does not assist the defendants, given that the proposed amendments in the present case actually limit the scope of the Patent as filed, and I am satisfied that the amendments relate to matters that were clearly and unambiguously disclosed in the application.

61 The defendants also argued that the following phrase in the proposed amendment to claim 1A, "more compact than a conventional magnetic disk or CD-ROM storage device", has no supporting disclosure. Their argument is that the disclosure only compares the size of the device with a "conventional portable data storage device" and not with a "conventional magnetic disk or CD-ROM storage device", as stated in the proposed amendment. This amounts to a trivial distinction without any material difference. Even the defendants' own expert agreed with Trek's position that "conventional" in the context of a PC would mean something that is used as a storage medium, *ie* floppy disks and CD-ROMs. This objection cannot be sustained.

Amendments must be clear and concise

62 The defendants complained that the following phrase in the proposed amendment, "more *compact* than a *conventional* magnetic disk or CD-ROM storage device" [emphasis added] is unclear and not concise. It is telling that the defendants' expert had no difficulties using the words "compact" and "conventional" in relation to the defendants' devices, but still registered an objection of non-clarity in respect of these two words in the proposed amendment. It is clear that the Patent discloses a small, portable, unitary and integrated device. There should be no issue over what these two words mean, given the context in which they appear.

63 Another point of ambiguity was raised in relation to the proposed claim 1A. The court has to decide whether claim 1A is inherent in claim 1. Beyond this question, if it is answered in the negative, then the court will still have to decide if the Patent sufficiently supports the addition of claim 1A. In any event, the evidence of the patent agents clearly point to claim 1A being a dependent claim on claim 1. Hence it is also the case that claim 1A is supported by the Patent, based on the ample evidence given by the patent attorneys.

Discretion defined

64 The defendants also submitted substantially as to whether the court should exercise its discretion in favour of amending the patent specifications. The scope of the discretion that is to be exercised in determining whether the amendments should proceed was set out in *Smith Kline & French Laboratories v Evans Medical Limited* [1989] FSR 561 ("*Smith Kline*") at 569. When a patentee applies to court to amend its patent specifications, the court considers:

- (a) whether the patentee has disclosed all the relevant information with regard to the amendments;
- (b) whether the amendments are permitted in accordance with the statutory requirements;
- (c) whether the patentee delayed in seeking the amendments (and if so, whether there were reasonable grounds for such delay);
- (d) whether the patentee had sought to obtain an unfair advantage from the patent; and
- (e) whether the conduct of the patentee discourages the amendment of the patent.

65 The issue is whether the above principles are still valid in the context of modern patenting. In a more recent decision of *Instance v CCL Label Inc* [2002] FSR 27 ("*Instance*"), Pumfrey J expressed the view (at [42]) that the approach taken by the courts in *Smith Kline* was "anachronistic and out of step with a modern law of patents". The basis for this view is compelling (see [39]):

I have to admit that I do not find the reasoning that underpins this approach entirely satisfactory. In the days before claims it was understandable. The patent was either valid or invalid, and to identify the need to disclaim part of the invention was to admit invalidity. To sue on a patent known to be invalid was seen to be wrong and unfair. When an application to disclaim was made, the patentee was put on terms that it would not start further infringement proceedings until the application to disclaim had been disposed of. With the advent of claims, and later provision for relief for infringement of a patent only partially valid, albeit on terms which would normally include amendment ... and on condition that the specification had been framed in good faith and with reasonable skill and knowledge, the rationale for this approach becomes less clear.

66 In considering whether discretion should be exercised in favour of granting an amendment, the shift in judicial attitudes appears to have been towards the scrutiny of the conduct and motives of the patentee. In *Mabbuchi Motor KK's Patents* [1996] RPC 387, Jacob J took the view that the overriding principle upon which the court acts is whether there was "grave misconduct by the patentee" or "bad faith (or fraud or dishonesty or insincerity)" and whether that has an effect on the public. As Jacob J said (at 397):

[A] refusal of a necessary amendment, which could of course lead to revocation, 'would be harsh and would only seem to provide justice if there are very exceptional circumstances'. Aldous J. primarily based his succinct statement of principle upon the judgments in *C. Van der Lely NV v Bamfords Ltd.*, where Pearson L.J. referred to 'grave misconduct by the patentee in relation to the patent' as being the test. Pearson L.J. was looking for 'bad faith (or fraud or dishonesty or insincerity or whatever it may be called)'. I must here, therefore, look to see whether there are very compelling reasons for refusal of the amendment.

67 The editors of the CIPA Guide to the Patents Act (Sweet & Maxwell, 5th Ed, 2001) observed (at para 75.06) that the general approach of the courts in applying its discretion has "become more lenient". It appears to be the position now that an amendment to a patent should be permitted unless there are compelling reasons against amendment. The approach which appears to find some sympathy amongst patent practitioners and commentators is that unless there are compelling reasons against allowing the amendments, amendments are generally allowed. Underlying this approach is the transparency of the patent system in Singapore and other countries in the world. Provision is made for the examination and scrutiny of patent applications. Examination reports are available for public

inspection, and so, adverse parties are able to evaluate the validity and strength of patents which have been filed. Adverse parties are therefore less likely to be surprised (and consequently prejudiced) by subsequent amendments which may be sought by the patentee, even if this takes place in the course of patent litigation.

68 The defendants resisted the amendments by, firstly, saying that Trek has not disclosed all relevant matters to explain the circumstances relating to the amendments. The scope and extent of the duty of disclosure was set out by the English Court of Appeal in *Oxford Gene Technology v Affymetrix Inc (No 2)* [2001] RPC 18 ("*Oxford Gene*"). I set out the following passage (at [19]):

[W]hen a patentee seeks amendment, the court requires him to place before it the relevant facts and matters upon which it is to exercise its discretion. This is particularly appropriate where some amendment proceedings are conducted without the presence of an opponent...It follows that the court is concerned with whether to exercise its discretion to allow amendment for that reason and the patentee must turn his mind to that issue so as to be able to inform the court of the relevant facts. Any disclosure should be limited to that issue and only ordered if necessary....From the transcript of the hearing before Laddie J, it seems that practitioners believe there to be an obligation upon a patentee to trawl through his documents to see whether they are relevant to the exercise of discretion, whatever the reason put forward for the amendment. That results in considerable expense and is not required under modern principles. The obligation of good faith requires the patentee to put forward correct reasons for the amendment. If there be facts relevant to the exercise of the discretion for those reasons then those facts need to be put before the court.

69 It is also clear that the disclosure does not compel the disclosure of privileged documents. The disclosure is still subject to privilege, which may be waived at the election of the patentee. If privilege is not waived, the court is also not entitled to draw an adverse inference against the maintenance of privilege. This is clear from the following passage from *Oxford Gene* at [21], which bears quoting *in extenso*:

There is no obligation upon a patentee in amendment proceedings to waive privilege in respect of any document. In so far as my judgment in *Bonzel v Intervention Ltd* [1991] RPC 231 has led to that belief – it was wrong. In his judgment in the *Kimberly-Clark* case, Laddie J said at page 237 that the obligation upon a patentee who sought amendment was to make full and frank disclosure "was so strong that effectively the patentee was put under pressure to waive his entitlement to legal professional privilege." I suspect that statement reflects a body of opinion among practitioners. For the reasons I have given, it is based upon a misapprehension as to the obligation on a patentee seeking amendment. It is also contrary to the law relating to privilege. As was pointed out in *WC Wentworth v JC Lloyd* (1864) 10 HLC 589, *the maintenance of privilege does not enable the court to draw an adverse inference against the person who maintains his privilege. The obligation to disclose material facts and matters does not require the disclosure of documents and I can see no warrant for a patentee throwing all his documents at the court as a policy or caution. Of course, a patentee's case may best be advanced by waiver of privilege, but the decision whether to waive privilege is one for him and not for the court. Certainly the obligation to tell the court of the facts material to the reason for amendment cannot act as a hidden obligation to waive privilege.* [emphasis added]

Alleged non-disclosure by Trek

70 The defendants claimed that Trek had failed to discharge its duty of full and frank disclosure to the court in five areas, namely:

- (a) the circumstances surrounding how Trek became aware of two out of seven instances of prior art cited by the defendants (the "Jones and Satore references") from November 2000, and in particular, whether Trek was advised that either of the prior art necessitated the amendment to the Patent, which it was now seeking;
- (b) whether Trek deleted claims 1 to 8 of its corresponding US patent to overcome any of the cited prior art raised by the defendants;
- (c) the identities of the recipients of the numerous letters which Trek sent, enforcing the Patent (so that the defendants could contact these recipients to determine if they were materially affected or prejudiced by the receipt of Trek's letters);
- (d) that most of the claims in Trek's corresponding US patent had been refused acceptance; and
- (e) that Trek's Australian patent, despite being previously accepted as amended, was now subject to further examination for patentability by the Australian examiner.

These allegations will be discussed in turn.

A. Jones and Satore references

71 It is clear that Trek knew of the Jones and Satore references in November 2000, and this was disclosed in evidence. However the references cannot be regarded as relevant prior art for the purposes of the application for amendment. The defendants pointed out that Trek chose to claim privilege in relation to advice that the two references did not constitute relevant prior art. No inference should be drawn against Trek over its continued claim of privilege over this document(s), and this is clear from *Oxford Gene*. A telling feature of the apparent lack of relevancy of these two references is that the defendants chose not to cross examine Trek's experts on these two references.

B. Trek's US patent application

72 The defendants suggested that Trek amended its US patent application ("the US Application") in March 2001 because of the Jones and Sartore references, the implication being that the prior art references must be relevant. Counsel for Trek correctly pointed out that the US Application relates to a different invention, and it was not the corresponding patent to the Patent. For this reason, it was also not material that Trek did not disclose a Final Rejection to the US Application by the US Patent Office – it pertains to a different subject matter. In the context of the US Application, the disclosure of these two prior art references have no bearing on the Patent. It should also be noted that the burden of disclosure in the US patent system is onerous, and patentees have to render complete disclosure of all known prior art references (whether or not relevant).

C. Trek's Australian and Canadian applications

73 Similar considerations apply for Trek's Australian and Canadian applications. In these countries, all prior art references had to be made, regardless of direct relevance. The defendants also alleged that Trek failed to give full and frank disclosure that further objections had been raised against Trek's applications in Australia. During cross-examination, it transpired that events had superseded the evidence that was filed in these proceedings on 28 November 2003.

D. *Identities of the recipients of Trek's letters*

74 The defendants also submitted that Trek did not provide full and frank disclosure since it blanked out the identities of the recipients of the letters sent by Trek. This was clearly not a tenable argument, in view of the fact that the letters were disclosed pursuant to a court order that the identities be redacted.

75 Overall, I did not consider that the allegation of non-disclosure made by the defendants related to matters that were germane to Trek's amendment application.

Has there been undue delay in bringing the amendment application?

76 The applicant for an amendment to his patent must act expeditiously, from the time he discovers the relevant prior art. The court still has to be satisfied, based on the facts and circumstances of this case, that Trek acted reasonably, and without undue delay. Mere knowledge of some prior art does not mean that Trek knew of the need to amend the Patent (see CIPA Guide at p 326). It is entitled to take the advice of patent agents on whether there is a need to amend, and what form such amendment should take. Pumfrey J best summarised the court's approach in *Instance* at [38]:

In making decisions as to the need to amend on the basis of the advice received from a competent patent agent, a patentee cannot normally in my judgment, be criticised. In this case, the advice was given by a competent professional adviser and received and considered by the individual who was not conversant with the details of the law relating to anticipation and who entrusted his professional advisers to provide the basis for decision. I should be loath in such circumstances to consider that the patentee had been guilty of culpable delay, the more so since the point upon which the need to amend turns is not free from difficulty.

77 Trek does not dispute that it became aware of the TDK and Lexar patent references by way of notification from the defendants' solicitors on or about 15 May 2002. It became aware of the Aladdin and Sony patent references on or about 20 May 2002, when it was served, *inter alia*, with M-Systems' objections based on validity and prior art. I agree with Trek's submissions, based on the above principles that the appropriate juncture to question whether the amending party has been guilty of unreasonable delay is the time when it was first made aware of the need to amend.

78 The first time Trek was made aware of the need to amend the Patent was shortly before it applied to amend the New Zealand patent, on or about 30 October 2002, after consultation with patent agents from various jurisdictions. One has to appreciate the complexity of the exercise of consultation. Trek had to co-ordinate with its patent agents in various jurisdictions to come up with the form of amendments that would be allowed under the laws and practices of different countries. Trek proceeded with the amendment to the Patent on 28 March 2003. The amendments were applied for after following a professionally driven process.

79 I do not believe that in the circumstances of this case, Trek acted with unreasonable delay to bring its application for post-grant amendments. The defendants continued to introduce prior art into the litigation, so the targets were constantly shifting. Even as of March 2003, the chronology shows that the defendants had not finalised its list of prior art objections. Ritronics' prior art pleadings were not finalised until 2 May 2003. The urgency was also compounded by the fact that trial was fixed for 28 July to 22 August 2003.

80 The defendants have not succeeded in showing this court that there was any bad faith or

reprehensible conduct on the part of Trek. Furthermore, the amendments which have been sought actually serve to limit the scope of the Patent, and do not add subject matter to the Patent. Most notably, certain embodiments are no longer claimed, namely devices which are plugged indirectly, devices which do not use a USB plug, devices which do not function as an alternative to a magnetic disk or CD-ROM, and devices which are incapable of storing software or the user's data.

81 For these reasons, Trek has sufficiently established a case for the amendments to the Patent, and I so order.

Defences

82 Each of the defendants' devices also infringe amended claims 1 and 7 of the Patent. I note that Trek's expert evidence on this issue was not rebutted by the defendants' experts or evidence. A case of infringement has been established with respect to each device based on the amended and unamended versions of the Patent.

83 The defendants raised two substantive defences to Trek's infringement claim:

- (a) the lack of novelty and inventiveness of the invention as expressed in the patent; and
- (b) misrepresentation concerning inventorship, and/or ownership of the Patent.

84 By way of precursor it should be noted that although the defendants challenged Trek's application to amend the Patent on the grounds of invalidity, the defendants did not, in their submissions and evidence, distinguish between the amended and un-amended claims.

85 I shall deal with each of the defences in turn.

Reference to prior art – whether the Patent fails for lack of novelty or inventive step

Novelty

86 The novelty question is decided by asking whether an invention forms part of the state of the art (s 14 of the Patents Act). That is, whether the prior art anticipated the invention. As was stated in *Hills v Evans* 4 De G F & J 288; 45 ER:

[T]he antecedent statement must, in order to invalidate the patent, be such that a person of ordinary skill and knowledge of the subject would at once perceive and understand and be able to practically apply the discovery without the necessity of making further experiments...the information given by the prior publication must, for the purpose of practical utility, be equal to that given by the subsequent patent.

87 The following principles apply to determining anticipation:

- (a) The prior art documents (which contain patent specifications and other literature) must be construed as if the court had to construe it at the date of publication, to the exclusion of information subsequently discovered by a reader skilled in the art to which they relate having regard to the state of knowledge in such art at the relevant date. An *ex post facto* analysis is not appropriate. Subsequent events or matters must be disregarded. (*General Tire & Rubber Company v The Firestone Tyre and Rubber Company Limited* [1972] RPC 457 ("General Tire") at 485; *Minnesota Mining & Manufacturing Co v Bondina Ltd* [1973] RPC 491 at 522);

(b) The court must not combine or “mosaic” disparate pieces of prior art in order to arrive at the invention in question. Each document should be considered separately; and

(c) The reader skilled in such art is a person of competent but average technical skill, who is unimaginative.

88 A reference to the following passage from *General Tire* (at 486) is also appropriate:

To anticipate the patentee’s claim the prior publication must contain clear and unmistakable directions to do what the patentee claims to have invented; ... A signpost, however clear, upon the road to the patentee’s invention will not suffice. The prior inventor must be clearly shown to have planted his flag at the precise destination before the patentee.

89 As stated earlier, the Patent discloses a portable compact mass storage device with an integrated USB plug that directly plugs into the USB socket of a host computer without any cable-connection interface. I accept the evidence of Trek’s experts, which shows that the cited prior art references (more than 46 in number) consist of storage devices that either (a) are not mass storage devices to begin with or (b) are mass storage devices that employ a different design approach. In relation to the latter, the prior art devices either require a connection cable to interface with the host computer or are secured and seated within the housing of the host computer. The defendants’ reference to miscellaneous publications and products are also either general articles about USB or do not establish prior publication.

90 It is also significant that the defendants confined their closing submissions to the Lexar, TDK, Ban and Aladdin prior art references. I would note that with the exception of Aladdin, the other three prior art references relate to devices with a cable. They also did not disclose any device with an integrated plug. It cannot be said that these devices anticipate the Patent. I accept the evidence of Trek’s expert, where he explained these devices were introduced into the market at a time when USB ports sat together with other expansion ports (serial and parallel ports) at the back of a desktop computer. The use of a cable obviously made a device more user friendly.

91 The Lexar, Ban and TDK references do not disclose any device with an integrated plug, and this is not disputed. The other instances of prior art that were pleaded by the defendants similarly make reference to cabled devices (eg Sandisk Imagemate, Fuji card reader, etc). In so far as none of the prior art references discloses a device with an integrated plug, they do not invalidate the Patent by anticipation. The three references also do not disclose a data storage device which is unitary and integrated. They typify data storage devices in the prevailing state of the art – a removable storage medium that is inserted into a reader/writer which is in turn connected to a computer or tower by means of a cable.

92 The same cannot be said for the Aladdin. It does disclose an integrated plug and a unitary and integrated device. However, being a security device, it is neither a mass storage device, which the ThumbDrive is, nor does it teach a skilled addressee how to create a mass storage device. In my view, given that the “mass storage device” is a material embodiment of the Patent, for the Aladdin to destroy the novelty of the ThumbDrive, it must “be such that a person of ordinary knowledge of the subject would at once perceive and understand and be able practically to apply the discovery without the necessity of making further experiments [and] ... the information ... given by the prior publication must, for the purposes of practical utility, be equal to that given by the subsequent patent” (*Hills v Evans* (1860) 31 LJ Ch 457 at 463). Given that it is not a mass storage device, it fails to meet this threshold.

93 For the above reasons, the defendants have failed to show that any of the prior art discloses an integrated mass storage device with an integrated plug. The novelty challenge obviously fails because the entire subject matter of the Patent (both unamended and amended versions) comprises much more – a portable compact mass storage device with an integrated USB plug that directly plugs into the USB socket of a computer without a cable connection.

Inventive step

94 According to s 15 of the Patents Act, an invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art. Oliver LJ postulated a test for obviousness in *Windsurfing International Inc v Tabur Marine (Great Britain) Ltd* [1985] RPC 59 ("*Windsurfing*") at 73:

- (1) Identify the inventive concept embodied in the patent in suit;
- (2) The court then assumes the mantle of the normally skilled but unimaginative addressee in the art at the priority date, imputing to him what was, at that date, common general knowledge in the art in question;
- (3) Identify what, if any, differences exist between the matter cited as being "known or used" and the alleged invention;
- (4) The court then asks itself the question whether, viewed without any knowledge of the alleged invention, those differences constitute steps which would have been obvious to the skilled man or whether they require any degree of invention.

95 At the outset, Trek tried to argue that Aladdin was not a relevant piece of prior art for the purposes of considering the inventive step; yet they considered it in the novelty enquiry. There is nothing in ss 14 and 15 of the Patents Act to allow this court to exclude the Aladdin from the state of the art as defined in the Patents Act. That said, it does not preclude the court from finding that in assuming the mantle of a skilled addressee it would not have considered a security device to be something that could have been used to create an improved data storage device. It would be too onerous for a skilled addressee to be expected to consider an alternative use or improvement of a security device (like the Aladdin) in data storage. The skilled addressee is after all, unimaginative (as stated in the *Windsurfing* formulation).

96 It is clear that there was no device available in the market or known generally that could have led a skilled but unimaginative person to invent the ThumbDrive, or to look upon it as the obvious next step in technology. An evaluation of the Lexar, TDK and Ban references do not reveal any teachings of an integrated plug. Contrary to what the defendants submit, the Patent does not teach a device with a cable (thus making a finding of obviousness easier). The defendant's expert not only agreed with Trek's experts that the prior art does not teach the use of an integrated plug, he also admitted that this was an inventive step.

97 Not only is the integrated plug not disclosed in the prior art, the skilled but unimaginative addressee would not have been able to invent such a device. The evidence has satisfied the court that the specifications only made reference to two types of connections for a USB device, both of which required use of a cable. The differences between the prior art and the Patent are apparent.

98 Moreover the prior art does not lead a skilled addressee to view an integrated device as the obvious next step in the technology. The Lexar, TDK and Ban references point to the prevailing state of the art as comprising a removable storage medium that was capable of being inserted into a two-

component device which consisted of a reader/writer, which in turn is connected to the computer by cable. Against this evaluation of the prior art, it would not have been obvious to a skilled addressee to have thought of creating an integrated unitary device. The Aladdin device, being a security as opposed to a storage device, would also have been disregarded by a skilled (but unimaginative) addressee from being a serious candidate from which the invention of the ThumbDrive was obvious. I also note the palpable lack of any evidence showing that the industry was moving in the direction of creating a unitary and cableless device. This puts even greater inventive distance between the Patent and the state of the art. Finally it is also noteworthy that the defendants' own experts admitted that a skilled addressee would take various steps in order to arrive at the ThumbDrive. The Patent is not the obvious next step. In this respect I disagree with the defendants' claim that it is obvious to go from a two-piece, cable-connected prior art to the ThumbDrive invention.

99 For the above reasons I also conclude that the defendants have failed to show that the Patent (whether unamended or amended) lacked inventive step.

Effect of commercial success

100 The ThumbDrive has shown itself to be a development of great utility, and has also satisfied a long-felt want in the trade. In both cases the inference of inventiveness is strong. The CIPA Guide to the Patents Acts states:

The question of obviousness is probably best tested, if this be possible, by the guidance given by contemporaneous events ... if an invention has resulted in the solution of a problem which has been troubling industry for years and achieves immediate success upon its introduction, then the suggestion after the event that the step was obvious inevitably rings a little hollow.

101 The credit that should be accorded to the commercial success of an invention is also well set out by Tomlin J in *Samuel Parkes & Co Ltd v Cocker Brothers Ltd* (1929) 46 RPC 241 at 248:

[W]hen once it had been found ... that the problem had waited solution for many years and that the device is in fact novel and superior to what had gone before, and has been widely used, and used in preference to alternative devices, it is ... practically impossible to say that there is not present that scintilla of invention necessary to support the patent.

102 The findings of novelty and inventive step with respect to the Patent are fortified in this case by the accolades that greeted the ThumbDrive when it was launched, and the subsequent commercial success enjoyed by Trek. The multitude of clone storage devices that followed in its wake, including the defendants' devices, is further indication of a profitable venture.

Misrepresentation

103 Section 80(1)(g) [now s 80(1)(f)(ii)] of the Patents Act provides for the revocation of a patent in the event that the patent was obtained on a misrepresentation:

(1) Subject to the provisions of this Act, the Registrar may, on the application of any person, by order revoke a patent for an invention on (but only on) any of the following grounds:

...

(g) the patent was obtained on a misrepresentation.

104 Similar provisions (not *in pari materia*) exist under s 32(1)(j) of the UK Patents Act 1949 (repealed) and s 100(1)(j) of the Australian Patents Act. The current UK Patents Act 1977 does not have a similar provision.

Alleged misrepresentations

105 The defendants alleged that Trek had misrepresented to the registrar of patents at the time Trek sought a patent for the ThumbDrive invention:

(a) M-Systems claims that an employee of the Trek's related company S-Com Pte Ltd ("S-Com") was one of the inventors of the ThumbDrive invention and hence, Trek is not the full owner of the ThumbDrive Patent.

(b) M-Systems claims that there was a misrepresentation to the Registrar of Patents when Trek did not name one of the inventors when it applied for the Patent.

(c) Ritronics alleges that 2 former Trek employees had developed the ThumbDrive invention and that the rightful owner of the ThumbDrive invention is a Chinese company called Netac Technology Ltd.

Misrepresentations must be material

106 In David Young *et al*, *Terrell on the Law of Patents* (Sweet & Maxwell, 14th Ed, 1994) at para 5.130, it is stated that a misrepresentation must also be *material* so as to revoke a patent:

It is irrelevant whether or not there was deliberate falsehood by the patentee if the Crown was in fact misled, but "if false suggestion is alleged, it must be established on the basis of the documents in which the alleged false suggestion was made – the onus being, of course, on the objector." In *Intalite International NV v Cellular Ceilings Ltd (No. 2)* [1987] RPC 532 Whitford J held that the mere fact that a misleading statement might be found in the body of a specification was not sufficient to establish invalidity on the ground of the false suggestion. The statement must have misled the Comptroller into granting the patent. The patent is obtained upon the suggestions or representations set out in the recitals to the patent grant itself and falsity in any of them will be sufficient to invalidate the patent, if false statement is of such materiality that the patent can be said to be "obtained" on it.

107 As seen from the above passage, the onus is on the defendants to show that the misrepresentation must actually have deceived the registrar of patents into granting the Patent (see also Blanco White, *Patents for Inventions and the Protection of Industrial Designs* (Stevens & Sons, 5th Ed, 1983) at para 4-1002). In the Australian decision of *Prestige Group (Australia) Pty Ltd v Dart Industries Inc* 19 IPR 275 at 279, Lockhart J articulated a test for material misrepresentation:

I would state the test, however, in different terms, namely, whether the conduct constituting the false suggestion or representation materially contributed to the Commissioner's decision to grant the patent even if other circumstances or causes also played a part in the making of that decision. It is sufficient if the conduct is a *material inducing factor* which led to the grant. [emphasis added]

Relationship between S-Com and Trek; Poo Teng Pin and Marcus Cheng

108 The inventive concept underlying the ThumbDrive was developed by one Poo Teng Pin ("Poo")

and one Marcus Cheng ("Marcus"). They were both employees of S-Com and Trek. S-Com and Trek were wholly-owned subsidiaries of the parent company, Trek 2000 International Ltd. Both S-Com and Trek were very close. There was some evidence of an agreement or understanding between both companies at the material time to register patents in the name of Trek, and so it came to pass. Both Marcus and Poo were co-inventors of the patent, but curiously, Marcus, who was Head of the Engineering Department and tasked to liaise with patent agents and prepare the patent application, named himself as the sole inventor. Trek subsequently came to realise that Poo had been omitted from the patent application. Marcus subsequently left the employ of Trek. Trek managed to contact Marcus so that he could confirm via declarations that Poo was a co-inventor of the Patent.

109 I am satisfied, after hearing the evidence, that once Trek discovered the omission of Poo as a co-inventor, it took the following steps to rectify the error:

- (a) A letter was written to the World Intellectual Property Organisation (WIPO) as soon as Trek's patent agent in Singapore was notified;
- (b) WIPO issued an official notification in November 2002, stating that the identity of the inventor had been corrected;
- (c) A copy of the WIPO notification was sent to the Intellectual Property of Singapore on 13 December 2002; and
- (d) A copy of the WIPO notification was also sent to patent agents all over the world, so that national registers could be rectified accordingly.

110 The cause of the omission was inadvertence. There was no evidence to suggest a deliberate omission on the part of Marcus. The error of mis-stating inventors happens quite frequently. In Singapore patent practice there is a form for this and other forms of errors. One can only infer that it may be a common occurrence.

Assignment agreement

111 When Trek found out that they had made a mistake in not including Poo as co-inventor, an assignment agreement was drawn up, as a matter of prudence, for S-Com to transfer whatever residual rights it had in the invention to Trek. There was some discrepancy over the date of execution, but the assignment agreement appears to have been prepared in or about June 2002.

112 Section 19(2) of the Patents Act sets out categories of parties who are entitled to the *grant* of the Patent (to be contrasted with parties who are entitled to *apply* for the Patent under s 19(1)). Section 19(2) provides:

A patent for an invention may be granted —

- (a) primarily to the inventor or joint inventors;
- (b) in preference to paragraph (a), to any person or persons who, by virtue of ... an enforceable term of any agreement entered into with the inventor before the making of the invention, was or were at the time of the making of the invention entitled to the whole of the property in it (other than equitable interests) in Singapore; or
- (c) in any event, to the successor or successors in title of any person or persons

mentioned in (a) or (b) or any person so mentioned and the successor or successors in title of another person so mentioned,

and to no other person.

113 Trek's entitlement to the invention *ie* its right to be granted the Patent, is derived from two sources:

- (a) Through its employee, Marcus, under section 19(2)(b) (not a disputed point); and
- (b) From an assignment of S-Com's right to the invention in favour of Trek. Under s 19(2)(c), Trek is entitled to S-Com's right to be granted the Patent as a successor-in-title to S-Com.

114 The assignment agreement does not need to be formally executed, since it is an assignment of the rights to the invention, as opposed to the assignment of "any right in a patent". In the case of the latter, formal execution (*ie* in writing, signed by both parties) is required under ss 41 and 43 of the Patents Act. In its closing submissions, Trek submitted that the assignment agreement was not necessary and was only drafted with the intention of assigning any residual rights of the invention that S-Com might own to Trek, and was done only as a matter of prudence. By the time the assignment agreement was drafted (June 2002), the Patent had already been granted correctly in Trek's name in April 2002, pursuant to the agreement between S-Com and Trek that all patent applications be filed in the name of Trek. Trek argued that there had been no misrepresentation to any of the relevant authorities as to the identity of the owner. The Patent was correctly applied for, and granted in the name of Trek.

Trek's errors did not materially contribute to the decision whether or not to grant the Patent

115 Even though there may have been factual inaccuracies in Trek's application process, at the end of the day, the court should ask whether the inaccuracies materially contributed to the decision to grant the Patent. In *Speedy Gantry Hire Pty Ltd v Preston Erection Pte Ltd* 40 IPR 543 at 560, the court held that even if the patent applicant's statement alleging an assignment was false, such false suggestion or representation "would not have contributed materially to the commissioner's decision to grant the patent and so long as [the applicant] was entitled pursuant to section 34 of the 1952 Act to apply for the patent, *the particular grounds upon which that entitlement arose were immaterial*" [emphasis added]. The English Patents Court has also pronounced, in the case of *Coflexip Stena Offshore Limited's patent* [1997] RPC 179 ("*Coflexip*") at 193, that "[f]rom the public point of view, what really matters is that the register should show who the proprietor is. How he came to be the proprietor is of no or little importance."

116 The evidence in this case was sufficient to show that Trek had a basis to hold itself out to the registrar of patents to be the owner of the Patent. The operative presumption must therefore be that Trek is entitled to be the owner of the Patent (s 19(3) of the Patents Act). Whether it is registered or not, the assignment agreement carries evidentiary weight in that it clarifies beyond doubt that S-Com had transferred all rights in the invention to Trek. Trek was entitled to file the patent application as owner.

117 The omission of Poo's name as co-inventor was an error that Trek acted with reasonable dispatch to repair. From the correspondence admitted into evidence I fail to see how the omission of Poo, and the subsequent rectification, could be said to materially affected the grant of a Patent in a self-assessment system. None of the patent offices in other countries appeared to have had any difficulty amending the patent application to include Poo as co-inventor. I also note that no evidence

was tendered on behalf of the defendants to show how the identity of the inventor “materially contributes” to the decision of the registrar of patents whether to grant the Patent.

Allegation that the rightful owner of the ThumbDrive invention is a Chinese company called Netac Technology Ltd

118 Ritronics also brought a claim for misrepresentation against Trek. It is based on a patent filed and obtained in China (Chinese patent no 99117225) (“the Chinese Patent”) by two individuals, Steven Cheng XiaoHua (“Cheng”) and Frank Deng GuoShunn (“Deng”). Cheng and Deng own and manage a company in China called Netac Technology Ltd (“Netac”). They used to be former employees of Trek.

119 Ritronics alleged that the invention in the Patent must have been stolen from these two individuals or Netac. For Ritronics to succeed in this allegation, the court has to be satisfied that the inventive concept of the Chinese Patent is the use of an integrated USB “A” plug for a portable data storage device. More importantly, there must be compelling evidence that Trek usurped the concept. On both these counts, Ritronics cannot succeed based on the evidence before the court.

120 As a preliminary observation, the Chinese Patent and corresponding applications to the European Patent Office (“EPO”) were filed by Netac *after* the Patent’s priority date. It does not constitute prior art in the present proceedings.

121 While the Chinese Patent discloses a device that is broadly similar in the function of data storage, there are some notable differences between the Chinese Patent and the ThumbDrive. The Chinese Patent teaches and explicitly requires the use of one of three different cables to connect between the data storage device and the host computer to enable data exchange. The integrated plug element is also missing. In the course of cross-examination, defendants’ counsel made the argument for the first time that the Chinese patent actually discloses a device with a USB “A” plug, like the ThumbDrive invention which the user connects with a cable to the host computer. I do not accept this argument for the following reasons:

- (a) There is no disclosure or reference made to a USB “A” plug in the Chinese Patent, whether integrated or otherwise.
- (b) Netac’s corresponding EPO application expressly describes the need for and use of a “socket” component in the device, rather than a plug. There are also three different types of cables described in the application.
- (c) The Chinese Patent was not directed towards an extension cable with a USB “A” socket.
- (d) The references to “socket” in the Chinese Patent refer to a USB “B” socket.
- (e) The use of the term “plug” in the English translation of the Chinese Patent refers to the mechanical action of plugging a device rather than describing a physical component.
- (f) The corresponding EPO application disclosed the use of the Philips D12 driver, which teaches the use of a “B” socket, rather than a USB “A” plug. This is confirmed by the circuit diagram of the D12 circuit.

122 Any suggestion that Trek stole the ThumbDrive invention from the Netac’s EPO application is also tenuous. The defendants referred to a figure which disclosed a device with a USB “A” plug. The

EPO application was filed seven months after the launch of ThumbDrive at CEBIT 2000. The chronology does not support Ritronics' theory that Trek stole the invention. There was also some evidence of a commercial collaboration between Netac and Trek, the latter holding 20% of the shares in the former. Moreover Ritronics did not produce any direct evidence that Trek had usurped the ThumbDrive solution from Deng and Cheng, who were employees of Trek at one point in time. There was no evidence that Trek secured Netac's silence by financial reward. There was also no evidence that Netac had produced a prototype device in August 1999. Ritronics also relied on certain documents which confirmed that Deng and Cheng are the rightful owners. It emerged that the documents were evidence of a business collaboration between Netac and Trek. Cheng and Deng worked in Trek, and derived some knowledge of flash memory management from two cable-connected development boards. Thereafter they founded Netac and approached Trek for funding. Trek proceeded with a collaborative arrangement with Netac since there was a possibility that Netac had a useful or novel invention that could eventually be exploited by Trek. A confidentiality agreement was executed by the parties, with Netac requesting Trek to be a manufacturer of its products and distributor for all territories outside China. There was however no evidence of any inventions, patents or other materials that were subsequently disclosed by Netac to Trek. Netac went on to file a patent for the "USB Flash Disc", and asked Trek to pay the filing charges.

123 Whatever may have been Trek's reasons for investing in Netac, there was no evidence of any conspiracy between the parties to conceal the fact that Cheng and Deng were the rightful owners of the Patent. There is no evidence to show that they can lay claim to the ownership of the patent. Ritronics made serious allegations against Trek, for example doctoring payment vouchers, which were uncalled for and should have been avoided altogether.

124 For the above reasons, I conclude that the defendants' submissions based on s 80(1)(g) of the Patents Act are not well founded.

Innocent infringement – s 69 of the Patents Act

125 The defendants claim to be innocent infringers, and rely on s 69(1) of the Patents Act, which states:

In proceedings for infringement of a patent, damages shall not be awarded and no order shall be made for an account of profits against a defendant who proves that at the date of the infringement he was not aware, and had no reasonable grounds for supposing, that the patent existed.

126 The defendants have to prove that, at the date of the infringement, they were not aware and had no reasonable grounds for supposing that the Patent existed. The evidence suggested that patent notifications were issued by Trek:

(a) Advertisements in MASNET, the Straits Times and Business Times by Trek 2000 International;

(b) Notification letters to Flextech Holdings Limited, and to Sony Electronic Devices Marketing (Singapore) on 17 April 2002.

127 FE Global and Electec were put on notice on 17 April 2002, when they received the notification. The M-Systems were put on notice, at the latest, by 22 April 2002. The evidence showed that the infringing product was purchased by Trek's representative on 24 April 2002. It would be reasonable to infer that as at the date of the infringement, the defendants already had notice of

the existence of the Patent. The defendants cannot claim to be innocent infringers under s 69(1) Patents Act. In any event, invoices dated after 17 April 2002, which passed from M-Systems to Electec, showed that sales continued notwithstanding the notification. Ritronics also continued to deal with SDs after Trek's solicitors wrote to them in May 2002. Ritronics' evidence was that it intended to move operations to a company (Ritech) that was incorporated in Hong Kong to avoid infringement. Ritech is nothing more than an agent of Ritronics, and the evidence showed that Ritronics/Ritech continued to deal in infringing products after receiving a letter from Trek's solicitors.

No damages should be awarded because of s 75 of the Patents Act

128 The defendants also argued that they could not be liable for any damages (in the event that this court makes a finding of infringement) because Trek had not registered the assignment agreement with the Intellectual Property Office of Singapore ("IPOS") within six months of the execution. Section 75 provides that when a party becomes a proprietor of a patent by virtue of an assignment, he is entitled to damages only if he registers the transaction or instrument within six months of its date (only applicable to transactions, instruments and events falling within the ambit of s 43 of the Patents Act). Section 75 does not provide a defence. It only provides a benefit to defendants "adventitiously": see *Coflexip* at 193.

129 At the stage of closing submissions, Trek's position was that the assignment agreement was not registrable under s 43 of the Patents Act, since it purportedly assigned a right to an invention, as opposed to right(s) in a patent or application to a patent. Trek subsequently tried to register the assignment agreement with IPOS, and this was the subject of another application by the defendants, which is dealt with below.

130 The defendants cannot rely on s 75 because Trek have always been the lawful owner of the Patent on record. This was how the Patent was applied for, and a presumption operates that they are the lawful owner of the Patent.

Defendants' allegations of groundless threats

131 The defendants also brought a counterclaim for groundless threats under s 77 of the Patents Act. Given that this court has concluded that the Patent is valid, and that the defendants did commit infringement of the Patent, within the framework of s 77 (and in particular s 77(2)), the defendants will not succeed in their claim for groundless threats of patent infringement. In any event, I am of the view that the two letters, which were at the centre of this part of the dispute, were nothing more than letters exploring the possibility of a business collaboration, and any allegation that groundless threats were made is misconceived. This is quite apart from the fact that a finding of infringement (as in this case) is a complete answer to any allegation made under s 77 Patents Act.

Further evidence in Summons in Chambers No 4463/2004/Z

132 The defendants did not give up their challenge. In October 2004, after parties had closed their respective cases, with closing submissions exchanged, the defendants made an application to court by way of SIC 4463/2004/Z for further evidence to be adduced. They submitted that this was in response to new matters raised by Trek in paras 29.113, 29.114 and 31.24 and Annex A of Trek's Closing Submissions. The defendants also wanted to file supplementary evidence of Trek having taken steps in the EPO and the UK Patent Office, which were contradictory to Trek's position in the Singapore proceedings. They accused Trek of bad faith in failing to disclose the contradictory steps as well as the EPO's revocation of acceptance of Trek's application to the EPO. Even though I doubted if the additional evidence was of any real significance to the case (following the test in

Vernon v Bosley (No 2) [1997] All ER 614 at 627), I gave leave for supplementary affidavits to be filed so as to prevent any risk of injustice to the parties.

133 The new evidence traverses the following issues:

- (a) Correspondence between Trek's patent agents, Lloyd Wise, and IPOS, which concerned an application to register the assignment agreement under s 43 of the Patents Act; and
- (b) Post-trial developments to the prosecution of Trek's patents in the EPO and the UK Patent Office

Registering the assignment agreement under s 43 of the Patents Act

134 In its Closing Submissions, Trek made reference to a letter dated 7 May 2004 from Lloyd Wise to IPOS enclosing an application to register the assignment agreement between S-Com and Trek. While Trek had previously maintained that the assignment agreement is not registrable under s 43 of the Patents Act, it made an application to register the transaction *ex abundanti cautela*. The court is fully aware of the position taken by the parties in their submissions, and will give appropriate weight to this new development. The apparent inconsistency in Trek's position, which the defendants allude to, is a very far cry from saying that the defendants have established on the evidence, taken as a whole, that Trek are not the lawful proprietor or owner of the Patent. In para 4 of IPOS' letter of response, it said that "[i]f Trek Technology (S) Pte Ltd is not the sole proprietor as mentioned above, it would appear that an error was made at the point of filing this application. If so, please take the necessary actions to rectify the situation." This is, not unexpectedly, a *conditional* response to Lloyd Wise's letter. Trek have always maintained their position that since all rights in the Patent had been assigned to Trek prior to the date the application was filed, there was no requirement for such an application to register the assignment agreement. This new evidence does not take the defendants very much further, especially given that the assignment agreement took place after the Patent was filed. In the agreement, no reference was made to the Patent; therefore, no rights in it were ever assigned.

Trek's UK patent and EPO application

135 In the course of trial the Plaintiffs made reference to their corresponding UK patent and EPO application in support of the proposed amendments to the Patent.

136 The defendants submitted by way of new evidence that after trial the EPO raised objections to Trek's EPO application, on grounds that were substantially similar to the Defendant's objections against the Patent. After the trial, Trek applied on 2 July 2004 and 24 June 2004 to amend its UK patent and its EPO application respectively. The defendants submitted that these amendments contradicted Trek's position taken in relation to the same subject matter at trial, and should have been disclosed to the court in Trek's Closing Submissions, which were filed on 6 July 2004. The defendants submitted that by not doing so Trek has breached its duty of full disclosure owed to the court when applying to amend the Patent. The amendments made to the UK patent and the EPO application include:

- (a) Introduction of disclaimers to claim 1 of the UK patent and EPO application that contradict the position taken on the construction of claims of the Patent;
- (b) Replacing the phrase "directly plugged into" with "directly introducible into and removable from" in claim 1 of the UK patent and EPO application; showing Trek's lack of belief in

the validity of the phrase; and

(c) Adding the phrase "to permit the transfer of data from one computer to another" to claim 1 of the UK patent and EPO Applications, which phrase has been stated by Trek to be necessary to distinguish prior art such as Aladdin from the ThumbDrive. Hence the amendments sought by Trek are insufficient to distinguish prior art.

137 The defendants overstate the case when they say that Trek placed extensive use on their UK patent and EPO application. It has remained Trek's position that for the purposes of the amendment proceedings, any foreign applications made by Trek are irrelevant to the issues raised in the amendment proceedings. The foreign proceedings are referred to for illustrative value only.

138 Amendments were made by Trek to the EPO application because of an alleged prior art (EP1102172, referred to as the "Yao reference") The Yao reference *does not* form part of the relevant state of the art in Singapore, and at no time have the defendants pleaded it as relevant prior art. The EPO issued a summons for Trek to attend oral proceedings. The summons was only issued on 19 August 2004, after Trek filed its Closing Submissions. The EPO's objection is provisional and does not serve as confirmation that Trek's EPO application will not be allowed. The disclaimers were introduced by Trek to their UK patent and EPO application so as to overcome the limitations of the Yao reference. I would also note that Trek has also made further refinements to the wording of its UK patent and EPO application.

139 The defendants alleged that the change in the form of words used, that is, the replacement of "directly plugged into" with "directly introducible into and removable from" indicated Trek's own lack of belief that the words "directly plugged into" would be allowed. On the contrary, in the counter-statement that was filed by Trek in the UK proceedings, it was submitted that the meaning of the terms "directly plugged" and "coupling directly" were both apparent and clear from the specifications of the patents as filed. The terms mean physically connecting a first device to a second device without an intervening cable. There is no contradiction as this has always been the position taken by Trek.

140 As for Trek's addition of the words "to permit the transfer of data from one computer to another", these words do not amount to an admission that the Aladdin prior art reference renders the Patent obvious. Looking at the counter-statement filed, Trek maintained its position with regard to the Aladdin prior art reference, using substantially the same submissions made in the present proceedings.

141 Having considered these latest developments in the UK and the EPO, I am unable to accept that they add any real significance to the outcome of the case. The principle of territoriality allows this court to independently determine the outcome of the Patent and its amendments. The court is aware that patent practice, procedure and prosecutions vary from country to country. Trek should be expected to take whatever decisions necessary to secure patent rights in each country that it requires protection.

Conclusion

142 For the above reasons, I would allow Trek's claims in Suit 609/2002/K, and dismiss the counterclaim. I also grant an order in terms of Notice of Motion No 83 of 2003/Y. Suit 604/2002/N is dismissed with costs. Damages are ordered to be assessed. I will hear parties on costs and other consequential orders.

Claims in Suits 609/2002 and 672/2002 allowed. Counterclaim in Suit 609/2002 dismissed. Claim in Suit 604/2002 dismissed.

[\[1\]](#) NOE 5 May 2004 at p 44

[\[2\]](#) NOE 5 May 2004 at p 110

[\[3\]](#) NOE 5 May 2004 at p 104

[\[4\]](#) NOE 5 May 2004 at p 106.

[\[5\]](#) NOE 29 April 2004 at pp 147, 150, 1520; 5 May 2004 at p 95

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