OFFICE OF FAIR TRADING

Anticipated acquisition by Honeywell International inc of First Technology plc

The OFT's Decision on reference under section 33 given on 14 March 2006. Full text published 24 March 2006.

Please note that the square brackets indicate figures or text which have been deleted or replaced with a range at the request of the parties for reasons of commercial confidentiality.

PARTIES

1. Honeywell International Inc. (Honeywell) is a US company active in the manufacture of various technologies used in the aviation and automotive industries, as well as products for the home. Honeywell's products are diverse and include aircraft engines, avionics, alarm systems, heating and ventilation controls, sensors and electronics used in cars, turbochargers, speciality chemicals and gas detectors. Its worldwide turnover was US$25.6 billion (around £14.5 billion) in 2004 and its UK turnover was £[ ] million.

2. Honeywell is active in the supply of gas detectors and gas sensors through its Swiss subsidiary company, Zellweger Analytics (Zellweger).

3. First Technology plc (FT) is a UK company which manufactures automotive safety testing devices (e.g. crash test dummies and crash walls), automotive sensors, circuit breakers, gas sensors and gas detecting equipment. Its worldwide turnover for the financial year 2004/05 was £[ ] million of which around £12 million was accounted for by sales within the UK.

4. FT has a number of subsidiary companies active in the supply of gas sensors and gas detectors. These are City Technology Limited (CTL which supplies gas sensors), BW Technologies (BWT which supplies gas sensors, portable detectors and fixed detectors), MST (fixed detectors), EnviteC (gas sensors) and SensoriC (gas sensors). In addition, BWT's subsidiary companies Manning and Vulcain both supply fixed gas detectors.

TRANSACTION

5. Honeywell has launched a public takeover offer for the majority of FT's shares. If successful, FT will become a subsidiary of Honeywell. Honeywell intends to acquire all of FT's shares and de-list the company from the London Stock Exchange. The total value of the transaction is approximately £400 million.

6. The merger was notified to the Office of Fair Trading (OFT) on 2 February and the statutory deadline was 2 March but extended to 16 March. The proposed merger is subject to the City Code on Takeovers and Mergers and Honeywell expects its offer to be made unconditional in mid March to early April 2006.

JURISDICTION

7. As a result of this transaction Honeywell and FT will cease to be distinct. The parties overlap in the supply of some gas sensing and some gas detecting equipment and the share of supply test in section 23 of the Enterprise Act 2002 (the Act) is met in regard to the supply of fixed gas detectors to the petrochemical industry, portable gas detectors and gas sensors.

8. The OFT therefore believes that it is or may be the case that arrangements are in progress or in contemplation which, if carried into effect, will result in the creation of a relevant merger situation.

RELEVANT MARKET

9. The parties overlap in the manufacture and supply of some automotive products (load cells and automotive sensors), gas sensors and gas detecting equipment. The parties' overlap in the supply of automotive products in the UK although their combined share is small ([<5] per cent) and is therefore not considered any further.

10. Gas sensors and gas detectors can be segmented according to their use or the type of technology involved. These are discussed below.

Product scope

Gas sensors

11. Gas sensors are designed to react when exposed to a particular gas or gases and are a key component to the manufacture of gas detectors.

12. Most major gas detector manufacturers also manufacture their own sensors. Honeywell (through its subsidiary Zellweger) manufacturers sensors in-house for use in its detectors but supplies very little to third parties. This is common within the industry. Other major detector manufacturers who have in-house gas sensor manufacturing operations (many of whom supply little if any to third parties) are Draeger, MSA, Riken, Tyco (Scott Instruments), Bionics, General Monitors and Industrial Scientific.

13. Gas sensors vary in the technology employed in them and they also vary in their level of accuracy, reliability and resistance to other gases. By technology, the various type of gas sensors are electrochemical (the most common, these generate an electrical signal when gases react on specially prepared surfaces), infrared, reagent paper and catalytic (or pellistors).

14. The parties and some third parties suggested to the OFT that gas sensors could be segmented by their use (i.e. the type of gas that they are designed to sense). This is because the end users do not substitute between types of gases that they wish to detect. The parties told the OFT that the main gases by which sensors could be segmented are hydrogen sulphide (H_2S), oxygen (O_2), ammonia (NH_3), hydrogen (H_2), carbon monoxide (CO) for domestic use, carbon monoxide for industrial use and flammable gases (for which catalytic sensors are used).

15. In 2000 the OFT decided that infrared combustible gas sensors and pellistors (catalytic sensors) were distinct products.[1] This was based on their different uses by end users and the lack of convincing evidence on supply side switching between the two. The geographic market for pellistors was considered to be at least UK wide.

16. In the current case, the OFT has not found it necessary to conclude on the exact product market definition for gas sensors because the competition assessment is the same however the product market is defined.

Gas detectors

17. Gas detectors allow the chemical reaction that occurs within the gas sensor to be communicated to end users via a reading or an alarm system. They are used to monitor the concentration of toxic or flammable gases in order to warn about possible hazards of intoxication, suffocation or explosion in a variety of different situations. Thus they help protect people and property.

[1] Proposed acquisition by City Technology Limited of the gas sensors business of Marconi Applied Technologies Limited, Advice of the Director General of Fair Trading to the Secretary of State for Trade and Industry, 11 December 2000.

18. Gas detectors can detect one or several gases. They can be portable or fixed. As portable and fixed detectors are used for different purposes it was put to the OFT by the parties that they should be differentiated. This differentiation is common within the industry and customer base. In its analysis the OFT has distinguished between these two types of detectors.

19. The parties as well as third parties have also suggested to the OFT that in addition to segmenting gas detectors by their portability, fixed gas detectors can be further segmented according to the industry of their use. This is because some industries require some special feature in the detectors. For example, the petrochemical industry requires detectors to be able to withstand extreme environments which significantly increase the cost of their housing (which in turn decreases their attractiveness to other industries). However, other detectors are substitutable across industries. For example, the OFT has been told that electrochemical detectors commonly used in the semiconductor industry can, and are, used in other industries.

Portable detectors

20. Portable gas detectors are often designed to detect multiple gases such as carbon monoxide, oxygen, hydrogen sulphide and flammable gases at the same time. There is a range of gas detectors, some of which are intended to be used over long periods of time requiring regular calibration and maintenance, while other detectors are intended to be disposable. The parties told the OFT that customers view the disposable and non-disposable type of detectors as substitutable as while the acquisition cost of several disposable devices may be higher than a traditional portable detector, maintenance costs are lower. However, some customers disagreed. They told the OFT that they could not easily switch between these two types of detectors since they are used for different purposes.[2]

21. The OFT has not found it necessary to conclude on the exact product market definition for portable gas detectors because the competition assessment is the same however the product market is segmented.

Fixed detectors

22. Fixed (or stationary) gas detectors continuously monitor gas content. They are fitted on a transmitter which is customised to that particular gas detector. The transmitter sends a signal to a remote unit for a reading. Given the use of industry

[2] Customers of portable gas detectors considered switching between suppliers of the same type of gas detector was easy.

standard signals, the parties told the OFT that detectors (together with transmitters) are largely compatible across different detector manufacturers.

23. Some gas detectors are designed to withstand hazardous or rough environments which require a more rugged housing. The technology used varies according to application, target gas and manufacturer.

24. The parties submitted that since the technologies are similar and supply side substitution is relatively easy, the product scope should include all fixed gas detectors. However, some competitors have told the OFT that supply side substitution may not be that easy if the potential entrant has not already developed a sensor using the relevant technology. If that were the case it would be time consuming and costly to enter.

25. Customers told the OFT that different technologies are not substitutable for one another. Indeed, from a demand side perspective fixed gas detectors can be further segmented into the end user industry sector.[3]

26. The parties submitted to the OFT that further segmenting of fixed detectors, in which they also overlap, should be those for use in the:

    - semiconductor industry (which use either electrochemical or reagent paper sensor technologies); and the
    - petrochemical industry (which uses electrochemical, infrared and catalytic sensor technologies).[4]

27. Customers of these detectors in the semiconductor industry told the OFT that they do not generally switch between the two type of technologies (i.e. electrochemical and reagent paper). While reagent paper based detectors offer a higher degree of reliability, they are also significantly more expensive.

28. Likewise, customers in the petrochemical industry tended to consider that the varying technologies were not substitutable (despite the parties submitting that they are).

29. The parties considered that beyond segmenting according to the industry of their use, fixed gas detectors should not be further segmented any further according to the type of gas that the equipment detects. This was because detector

[3] Customers told the OFT that switching suppliers of fixed gas detectors was costly as not all gas detectors are compatible with the wider gas detection system. However, they also said that switching at the same time as installing the overall gas detection system was quite easy.

[4] The parties also submitted that fixed gas detectors could be segmented into those for general industrial purposes and CO detection systems for the home. However, there is no overlap between the parties in the supply of these.

manufacturers generally offer a broad range of detectors relevant for the detection of gases in the industry that they are targeting, and in any case, as different industries are concerned about different gases, this would largely be an exercise in segmenting along similar lines as segmenting by industry.

30. The OFT has not found it necessary to conclude on the exact product market definition for fixed gas detectors because the competition assessment is the same however the product market is segmented. In its analysis the OFT has considered detectors according to whether they are portable or fixed, and for fixed gas detectors, whether they are used in the semiconductor industry or the petrochemical industry.

Geographic scope

Gas sensors

31. For gas sensors the parties considered that the relevant geographic scope should be at least European Economic Area (EEA) wide if not worldwide. This was supported by customers, many of whom told the OFT that they source their sensors from within the EEA but would consider sourcing them from anywhere in the world (as some do).

32. It is not necessary to conclude on the exact geographic market definition as the competition analysis is unchanged whichever definition is used. The OFT has examined the shares of supply on a UK, EEA and worldwide basis.

Gas detectors

33. For portable gas detectors the parties submitted to the OFT that the geographic scope should be the EEA. Third parties agree with this.

34. For fixed gas detectors the parties considered that the appropriate geographic scope is at least EEA wide if not worldwide. Most customers told the OFT that while they would be willing to source their detectors from anywhere in the world it was important to have service providers based locally in order to provide maintenance. This is something that most suppliers provide.

35. For portable and fixed gas detectors (further segmented by industry of use) it is not necessary to conclude on the exact geographic scope as this does not affect the competition analysis. For all of these the OFT has examined the products on a UK wide, EEA wide and worldwide basis.

HORIZONTAL ISSUES

Shares of supply

Gas sensors

36. Both parties supply carbon monoxide (CO) sensors to third parties in the UK. However, Honeywell sells cheap CO sensors for use in the home whereas FT supplies more expensive and more sophisticated CO sensors for industrial use. Therefore, there is no direct overlap in the CO sensor products supplied by the parties.

37. Honeywell's supply of gas sensors in the UK is negligible (less than [5] per cent of UK supply).[5] Its CO sensors account for [ ] per cent of its overall UK supply of gas sensors. The parties estimated that FT accounted for around [60-70] per cent of the total supply of gas sensors in the UK. So although the combined share of supply is high the increment is negligible. On a worldwide basis the parties estimated that FT supplied around [30-40] per cent of gas sensors and Honeywell less than [5] per cent. When segmented by the type of gas sensed, there is either no overlap in supply or Honeywell's supply is very small.

38. Internal documents indicate that CTL was not significantly constrained by Zellweger prior to the merger and it did not appear to be a viable alternative for many customers as it lacks the range offered by CTL.

Gas detectors

Portable gas detectors

39. For portable gas detectors the parties' estimated shares of supply are in table 1.

[5] The figures quoted here and elsewhere in the paper in regard to the parties relate to the calendar year of 2004 for Honeywell and the financial year of 2004-05 for FT. The slight discrepancy in time periods does not materially affect the competition analysis.

TABLE 1: PORTABLE GAS DETECTORS, SHARES OF SUPPLY (%)

	UK	*EEA*	*Worldwide*
Honeywell	[10-20]	[0-10]	[0-10]
FT	[0-10]	[0-10]	[10-20]
Combined	[20-30]	[10-20]	[20-30]
Draeger	[10-20]		[10-20]
MSA	[10-20]		[10-20]
Industrial Scientific	[0-10]		[10-20]
Tyco (Scott Instruments)	[0-10]		
RAE Systems			[0-10]
Riken			[0-10]

Source: The parties.

Fixed gas detectors for use in the semiconductor industry

40. The parties' estimate for shares of supply of fixed gas detectors are contained in table 2. Whichever geographic scope is used the increment as a result of the merger is small.

TABLE 2: FIXED GAS DETECTORS FOR SEMICONDUCTOR INDUSTRY, SHARES OF SUPPLY (per cent)

	UK	*EEA*	*Worldwide*
Honeywell	[20-30]	[20-30]	[30-40]
FT	[0-10]	[0-10]	[0-10]
Combined	[20-30]	[30-40]	[30-40]
Riken		[10-20]	[30-40]
New Cosmos		[0-10]	[10-20]
Bionics		[10-20]	[0-10]
Draeger		[10-20]	[0-10]
MSA		[10-20]	[0-10]
Tyco (Scott Instruments)		[0-10]	[0-10]

Source: The parties.

41. However, semiconductor industry customers have told the OFT that it is difficult to switch between detectors that employ different technologies. Therefore, it is appropriate to further segment these detectors by technology employed.

42. For detectors employing electrochemical technology the UK combined share of supply was estimated by the parties to be [10-20] per cent (increment [<5] per cent). On a world wide basis the combined share was estimated to be [10-20] per cent (increment [1-10] per cent).

43. Honeywell supplies almost all of the detectors employing reagent paper technology to semiconductor industry customers around the world including the UK (a third party competitor told the OFT that its share on a worldwide basis was almost 100 per cent). Although Honeywell's share of supply is very large the increment arising from the proposed merger is negligible.

Fixed gas detectors for use in the petrochemical industry

44. For fixed gas detectors supplied to the petrochemical industry the parties estimated that their combined share of supply in the UK was [20-30] per cent (increment [0-5] per cent). On an EEA basis they estimated that their combined share was [20-30] per cent (increment [0-5] per cent) and on a worldwide basis they estimated it was [20-30] per cent (increment [0-5] per cent).

Barriers to entry and expansion

45. Based on third party comments to the OFT the main barrier to entry to the supply of gas sensors and gas detectors is development costs. While these have not prevented entry into the supply of either, recent entry has not been frequent or substantial. Alphasense is a relatively new sensor manufacturer is the most notable example but its overall share of supply is small.

46. Detector manufacturers who source their sensors externally consider the investment and time required to move to in-house production of sensors is prohibitive for producers of their scale.

Buyer power

47. The parties indicated that they do face some buyer power in the supply of gas detection equipment. The parties submitted that their customers tend to be large multinational corporations with sophisticated procurement policies. For example, for portable gas detectors [ ] accounted for [ ] per cent of Honeywell's sales.

48. Whether there is substantial buyer power does not affect the competition assessment.

VERTICAL ISSUES

49. The proposed merger brings together Honeywell which has sizeable share of supply of gas detectors across most measures and FT which is one of world's

leading suppliers of gas sensors.[6] A number of third parties have raised concerns with the OFT that after the merger Honeywell will be able to leverage FT's position in the supply of gas sensors to strengthen its position in the supply of gas detectors.

50. These concerns have generally been raised by those gas detector manufacturers who do not manufacture their own gas sensors. They are therefore concerned that they will suffer under a leveraging strategy in that the combined entity could restrict the supply of sensors to third parties in order to strengthen its position in various gas detector sectors. Although there are numerous detector manufacturers who also manufacture a full (or at least wide) range of sensors in-house, of those who supply third parties only CTL manufactures the full range of sensors that can service the various market segments.[7]

51. The parties supplied evidence to the OFT showing that margins made from the sale of sensors are [ ]. This implies that there would be little incentive to restrict supply of sensors to third parties. Data on the volumes of sensors and detectors sold, together with the shares of supply in the detector segment, further indicate that reducing supply of sensors is unlikely to [ ].

52. Another concern raised was that Honeywell would control a large share of the electrochemical sensor supply to third parties (particularly for portable detectors) which could result in an increase in prices, or some adverse effect on the terms of supply, for those sensors. However, the increment to the supply of sensors is small.

53. The share of supply of those detector manufacturers who use gas sensors from outside their own firm account for a sizeable proportion of the supply of gas detectors. Information given to the OFT indicates that they account for around 30-40 per cent of the total supply of gas detectors in the UK (although a smaller share on an EEA and worldwide basis), 15-35 per cent of portable gas detectors in the UK (which is similar when measured on an EEA basis), over 50 per cent for all fixed gas detectors supplied in the UK (but is seems somewhat less on an EEA basis) and around 10 per cent for fixed gas detectors for the semiconductor industry.

54. Due diligence and internal documents supplied by the parties to the OFT show that Honeywell is concerned that some sensor purchasers may be put off by the vertically integrated nature of CTL. To address this Honeywell intends to isolate

[6] By 'most measures' the OFT means by portable gas detector, fixed gas detector for use in the semiconductor industry and fixed gas detector for use in the petrochemical industry by U, EEA and worldwide bases.
[7] E2V, Alphasense and Nemoto also supply sensors to third parties.

its sensor operations from the rest of its activities. This is not dissimilar from the current situation whereby FT keeps CTL at arm's length. FT itself is already an integrated supplier of both sensors and detectors but does not use its strong position in sensor supply to leverage its position in detector supply, suggesting it is not a profitable tactic.

55. Honeywell has told the OFT that it intends to continue supply of sensors to third parties after the merger, from both CTL and Zellweger.

THIRD PARTY VIEWS

56. Third party views on the proposed merger were mixed.

57. Gas detector customers who contacted the OFT were unconcerned. Gas sensor competitors were generally likewise unconcerned.

58. Some gas detector competitors did have concerns. They were concerned because they considered Honeywell's acquisition of FT's gas sensor manufacturing capability could be used to increase prices (or decrease supply) of gas sensors. One gas detector competitor was concerned that given Honeywell's position in papertape technology used in some detectors in the semiconductor industry, and FT's position in electrochemical detectors, the acquisition will lead to the merged entity having a strong position in the supply of gas detectors to the semi-conductor industry.

59. Gas sensor customers formed the group who were overall most concerned about the merger. Some were concerned that the merger would result in Zellweger no longer providing a competitive constraint on CTL on the supply of sensors. They considered that Alphasense was not large enough to do this.

60. However, Zellweger currently supplies very few sensors to third parties in the UK and the sensors offered by it and CTL are different.

61. Gas sensor customers were also concerned that Honeywell will stop or reduce supply of CTL gas sensors to them. This would mean that they would incur a reasonably large switching cost in adapting their detectors to be compatible with sensors sourced from elsewhere.

62. The OFT does not consider that the merged entity would have a strong incentive to do this (see above discussion on vertical issues).

63. Finally, gas sensor customers (who are generally also gas detector competitors) were concerned about the possible vertical implications of the merger which are summarised above.

ASSESSMENT

Horizontal issues

Gas sensors

64. Although FT has a large share of supply of sensors in the UK (and on other geographic measurements), Honeywell does not. Whether analysed in total or by their use, there is either no overlap in supply between the parties or the increment to supply is very small (<[5] per cent).

65. FT was not significantly constrained by Honeywell before the merger. This indicates that the merger may not remove an effective competitor in many instances. Furthermore, there are a number of large detector manufacturers who produce sensors in-house who may provide a competitive constraint.

Portable gas detectors

66. The combined shares of supply for portable gas detectors are [20-30] per cent (increment [0-10] per cent) in the UK, [10-20] per cent (increment [0-10] per cent) in the EEA and [20-30] per cent (increment [10-20] per cent) on a worldwide basis.

67. After the merger a number of strong competitors will remain. These include Draeger, MSA, Industrial Scientific, Tyco and RAE Systems (table 1). Furthermore, the OFT did not receive any customer concerns in relation to horizontal issues in the supply of portable gas detectors.

Fixed gas detectors for the semiconductor industry

68. The parties' combined shares of supply across the range of geographic scopes for fixed gas detectors to the semiconductor industry are outlined in table 2. The increments are low. What is more, when segmented by type of technology employed, the increments to the combined shares of supply are also small.

69. Customers have told the OFT that they source their detectors from more than one company and are unconcerned about the proposed merger.

Fixed gas detectors for the petrochemical industry

70. Like fixed gas detectors for the semiconductor industry, the increments to the parties' combined shares of supplies across the geographic scopes considered for fixed gas detectors for the petrochemical industry are small.

Vertical issues

71. The third party concerns relating to the proposed merger are focused on whether Honeywell would leverage its newly found strong position in the supply of gas sensors to benefit its position in relation to the supply of gas detectors (portable gas detectors were a particular concern to third parties). When analysing concerns of this nature the OFT examines both the incentive and the ability of the merged entity.

72. Based on the evidence presented to it, the OFT does not consider that the merged entity would have a strong incentive to embark on a leveraging strategy by reducing supply of sensors to third parties.

73. On the ability of Honeywell to be able to engage in vertical foreclosure after the merger, although the combined shares of supply for detectors will be higher, the OFT is not convinced that the position of the merged entity in the supply of gas detectors (however segmented) will be strong enough in relation to other suppliers make a leveraging strategy profitable. After the merger there will be a number of other suppliers offering competitive constraints. For example, Draeger, MSA, Industrial Scientific in the supply of portable gas detectors, and Riken, Draeger and Bionics in the supply of fixed gas detectors for the semiconductor industry.

74. Furthermore, although the other major detector manufacturers do not generally supply sensors to third parties, they clearly possess the ability to do so.

75. Consequently, the OFT does not believe that it is or may be the case that the merger may be expected to result in a substantial lessening of competition within a market or markets in the United Kingdom.

DECISION

76. This merger will therefore **not be referred** to the Competition Commission under section 33(1) of the Act.