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MTIC (VAT FRAUD) IN VoIP – MARKET SIZE: \$3.3B

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MTIC (VAT FRAUD) in VoIP – market size: \$3.3b

Richard T. Ainsworth

In the beginning, the VAT fraud known as missing trader intra-community (MTIC) fraud appeared to be a UK problem concentrated in the cell phone and computer chip markets. In the 2005/06 fiscal year it cost the UK an estimated £3 billion.¹ The UK solution was a domestic reverse charge² limited to these commodities.³ The solution however, caused MTIC to mutate (to other commodities) and migrate (to other Member States).⁴ As Dr. Michael Cheetham forecast, the UK's enforcement effort effectively doused the flames of fraud with kerosene.⁵

¹ HOUSE OF LORDS, EUROPEAN UNION COMMITTEE, STOPPING THE CAROUSEL: MISSING TRADER FRAUD IN THE EU (REPORT WITH EVIDENCE) HL Paper 101(May 25, 2007) 7 (HMRC estimate is of the amount “retained” by the fraudsters).

² Council Decision 2007/250/EC, 2007 O.J. (L 190) 42 and Council Decision 2009/439/EC, 2009 O.J. (L 148) 14 (extending the prior reverse charge until April 30, 2011).

³ HMRC, Measuring Tax Gaps 2009 (December 2009) ¶ 2.16 Indicating that the levels of fraud had fallen from 2006, and remained lower between 2007-08 and 2008-09. The following table was provided:

Attempted Fraud	2005-06	2006-07	2007-08	2008-09
Upper Bound	5.5	4.5	2.5	2.5
Lower Bound	4.5	3.5	1.0	1.0
Impact on VAT Receipts				
Upper Bound	4.0	3.0	2.5	2.5
Lower Bound	3.0	2.0	1.0	1.0

See also: 4 Distribution Ltd. v. HMRC [2009] UKFTT 242 (TC) at ¶ 41. In this case, the Court references the testimony Mr. Roderick Stone, senior office with responsibility within HMRC for combating MTIC fraud.

Mr. Stone's evidence was that the incidence of MTIC fraud had increased after the decision of the ECJ in the joined cases of *Optigen Ltd., Fulcrum Electronics Ltd., and Bond House Systems Ltd. v Commissioners of Customs and Excise* [2006] STC 419, from £1.12bn to £1.9bn in 2004-05 to £2.5bn to £4.5bn in 2005-06. **However he told us, and we accept, that the amount of fraud has now declined because of the effect of HMRC's denial of input tax repayment claims** where HMRC allege that the traders concerned knew or should have known that their transactions were connected with fraudulent tax loss **and also of the introduction of the reverse charge on the supply of mobile phones and computer chips** which was widely expected to be introduced on 1 October 2006 but whose introduction was delayed until 1 June 2007. **Exports and dispatches of mobile phones reduced in amount from £21 billion in the first half of 2006 to £2 billion in the second half of 2006 and only about 0.1 per cent of the 179,000 traders registered for VAT in the mobile phone and computer trade classifications have registered for the reverse charge since 1 June 2007.** The transactions in this appeal, of course, relate to the first half of 2006. (emphasis added).

It should be noted that Mr. Stone's testimony is given in March 2009. Within four months (July) the UK was making its first arrests for CO2 MTIC fraud (estimated to be between £1 billion and £1.5 billion in the UK). By the end of July CO2 MTIC was deemed so extensive that the UK unilaterally zero-rate all transaction in emissions allowances. The UK acted without prior approval of the Commission. Clearly, Mr. Stone was not aware of the prevalence of CO2 MTIC fraud in the market, even though Europol had begun an investigation 18 months earlier.

⁴ Harley Foster, *Something Nasty in the Greenhouse*, THE TAX JOURNAL 11 (Nov. 23, 2009) (indicates that there are no studies proving either the extent of the MTIC mutation or migration as a result of the UK's reverse charge, although considerable “anecdotal evidence” that suggests that this is the case) available at http://www.olswang.com/pdfs/taxdisputes_nov09.pdf.

⁵ HOUSE OF LORDS, *supra* note 1, at 78-82; Michael Cheetham, *For who so firm that cannot be seduced?* (2007 powerpoint presentation) at 20-23; 29-34 (on file with author).

MTIC is a technology-intensive fraud. The fraud itself can take only minutes.⁶ Proceeds then travel with lightning speed through a series domestic and foreign banks (Dubai, India, Hong Kong, Pakistan, China and Russia are common). When a withdrawal is made (in cash) on the other side of the world, the stolen VAT is nearly impossible to recover.⁷ The only thing that slows this fraud is the nature of the supply – goods must be delivered;⁸ services and intangibles however simply need to be made available.

This is why a fraudster's dream came true on January 1, 2005. On this day the EU opened the CO2 markets, and emissions certificates were now tradable throughout the EU. These digital supplies are highly vulnerable to MTIC.⁹ Emissions certificates (digitized intangibles) were delivered on behalf of fraudsters by the exceptionally efficient EU Emissions Trading System (EU ETS). Money was now printed in cyberspace for villas in the real world.

There is considerable concern in the EU that CO2 MTIC is the first fraud to cross from goods into services and intangibles. This concern is misplaced. The fraudsters crossed the goods/ intangibles-services border long ago. The concern should not be over CO2 MTIC's *discovery*; the concern should be over the inability of the EU to *anticipate* where this fraud is going, and to *close* off MTIC opportunities before the fraudsters harvest the low hanging fruit.

Somewhat like a Cyclops (who has single-vision problems to begin with) the Commission appears to be blinded by the recent MTIC discoveries. The EU needs to appreciate that it is up against very resourceful fraudsters. These fraudsters are very much at home in technology, the intricacies of specific markets, and the technical (operational) details of the EU VAT. Inadequate laws and ineffective approaches to enforcement have made the fraudster's activities difficult to monitor. Much like Ulysses hiding among the sheep at Polyphemus' cave, whenever a Member State moves forward to catch a thief – the fraudsters move ahead of them undetected. Loud threats of punishment mean very little when a fraudster knows he cannot be seen.

There are over forty discrete commercial markets infected by MTIC today. Some are in goods; others are in services or intangibles. Many of them are far more damaging than the five "fraud sensitive goods or services" recently selected by the Commission as targets for specialized enforcement measures in COM(2009) 511.¹⁰

⁶ Aline Robert, *La fraude a la TVA du CO2 se revele gigantesque*, La Tribune 22 (Dec. 16, 2009) (in French, original and translation on file with author) (discussing that the average time is 15 minutes for a MTIC transaction to be closed out on the BlueNext exchange in Paris.)

⁷ FINANCIAL ACTION TASK FORCE, LAUNDERING THE PROCEEDS OF VAT CAROUSEL FRAUD (Feb. 23, 2007) (see for example the £36m UK carousel, based in southern Spain which had Swiss bank accounts, but where funds are eventually withdrawn in cash in Hong Kong, and others funds invested in Spanish real estate are later old and re-invested in Las Vegas after passing through the Commonwealth of Dominica and Gibraltar).

⁸ Teleos plc & Others v. Commissioner of Customs and Excise. Case C-409/04, at 42 (determining that goods must "physically [leave] the territory of the Member State of supply" to qualify as an intra-community supply).

⁹ Richard T. Ainsworth, *MTIC Fraud Infects Tradable CO2 Permits*, 55 TAX NOTES INT'L 733 (Aug. 31, 2009); Richard T. Ainsworth, *CO2 MTIC Fraud – Technologically Exploiting the EU VAT (Again)*, 57 TAX NOTES INT'L 357 (Jan. 25, 2009).

¹⁰ Commission Proposal for a COUNCIL DIRECTIVE amending Directive 2006/112/EC as regards an optional and temporary application of the reverse charge mechanism in relation to supplies of certain goods and services

This paper selects one of the more serious of the unlisted areas VoIP (voice over internet protocol) MTIC. To the best of this author's knowledge (and as of the date of this article) no assessments have been issued, no arrests have been made, and no litigation has commenced in VoIP MTIC.

The point of this paper is not to begin a list of areas that are ripening for MTIC expansion (although a list will be provided and subsequent papers will explore many of them individually, including MTIC fraud in the European gas and electric exchanges) – the point is to demonstrate how tax authorities need to think to stop this fraud. In short, the authorities need to think like a “fraud-star”¹¹ to catch a fraudster.

But even more fundamentally, this paper underscore that the VAT itself (and not merely the EU VAT) is badly in need of repair. The fraud in emissions certificates is global – although we see it today as an EU problem. VoIP MTIC also extends well beyond the EU. As a result, missing trader fraud should not only be on Algirdas Šemeta's radar screen at the EU Commission, it should be high on the list of Jeffrey Owens' thing-to-do at the OECD.

Technological answers to the problem posed by missing trader fraud in services and intangibles are known and well tested.¹² The measures needed are largely administrative, but they depend on Member State cooperation, and Commission leadership in the EU, just as they depend on international cooperating and substantive direction from the OECD.

HOW MUCH MTIC IS THERE?

Accurate numbers are not available either for a single Member State, or for the EU as a whole. There are certainly no reliable estimates of global losses, or losses suffered in non-EU jurisdictions. In 2006 the UK estimated that it had experienced MTIC losses of between£2.98 and£4.47 billion.¹³ The German government had similar estimates.¹⁴

susceptible to fraud, COM(2009) 511, at Annex VI A (indicating that cell phones, computer chips, perfume, precious metals and emission certificates are the five fraud sensitive areas).

¹¹ The term “fraud-star” is borrowed from a speech by the Commissioner for Taxation and Customs Union. “Fraud-star” may not have been the Commissioner's intended expression – most likely “fraudster” was intended. However MTIC clearly has its share of “fraud-stars.” László Kovács, Introductory Remarks at the Press Conference on the Adoption of the Communication on Fraud –COM(2006) 254 (May 31, 2006) at 2, available at:

http://ec.europa.eu/commission_barroso/kovacs/speeches/introductory_speech_REV4.pdf

¹² See: Charlene-Adline Herbain, *VAT Fraud on Carbon Allowances*, TAX PLANNING INT. – INDIRECT TAXES (Sept. 2009) 4 (suggesting that the Commission should follow the software certification provisions of the American Streamlined Sales Tax Initiative); Richard T. Ainsworth, *MTIC Fraud Infects Tradable Carbon Permits*, 55 TAX NOTES INT'L. 733 (Aug. 31, 2009) (setting out a targeted solution to MTIC in the CO2 market); Richard T. Ainsworth, *Car Flipping in the UK The VAT Fraud Marketplace and Certified Solutions*, 47 TAX NOTES INT'L. 1157 (Sept. 24, 2007) (assessing the car-flipping VAT fraud in the UK to MTIC fraud and proposing a limited certified software solution); Richard T. Ainsworth, *Tackling VAT Fraud: Car Flipping and Computer Chips on a Carousel*, 46 TAX NOTES INT'L. 267 (Apr. 16, 2007) (comparing car-flipping fraud in Canada with MTIC fraud in the UK and proposing a certified software solution); Richard T. Ainsworth, *Tackling VAT Fraud: 13 Ways Forward*, 45 TAX NOTES INT'L. 1205 (Mar. 26, 2007) (assessing and comparing many of the most viable solutions for MTIC fraud and further proposing a fully digital solution); Richard T. Ainsworth, *Carousel Fraud in the EU – A Digital VAT Solution*, 42 TAX NOTES INT'L. 443 (May 1, 2006) (setting out a fully digital solution for MTIC fraud).

¹³ H.M. Treasury, 2006 PRE-BUDGET REPORT: INVESTING IN BRITAIN'S POTENTIAL – BUILDING OUR LONG TERM FUTURE 126 (Dec. 2006) Cm 6984, available at: <http://www.hm->

By March 2009 the UK felt it had made considerable progress in limiting MTIC in the cell phone and computer chip market through the adoption of a domestic reverse charge. As a result UK estimates of losses fell. The German government, which did not adopt a domestic reverse charge, did not see similar reductions. Were the UK estimates accurate? Probably not. For example, in its 2009 estimates the UK failed to include huge losses in CO2 MTIC. Fraud in the emissions market was well underway in 2009, but it had not been identified by the UK authorities, and thus was not included in any estimates.¹⁵

During the same 2006 period Europol's "best estimate" for MTIC fraud in the EU as a whole was €23 billion.¹⁶ If we assume that this base-line estimate *was* accurate in 2006, then *it is still* accurate in 2009 – even though the UK adopted its domestic reverse charge solution in the meantime. The reason why is simple – one of the results of a domestic reverse charge that was clearly set out by Dr. Cheetham in 2006 is that its adoption by less than all the Member States is a *transformative* not a *curative* event for MTIC. The country adopting a domestic reverse charge (within a community) becomes a base-camp for VAT-free goods that can be sent into the other Member States.¹⁷ Overall the fraud is not reduced; it maintains the same volumes or probably increases in scope.¹⁸ As a result, when Europol estimated in 2009 that there was an additional € billion in CO2 MTIC fraud we should take this figure as an additional amount of MTIC that should be aggregated into earlier estimates. Thus, MTIC in the EU has probably risen to at least €28 billion.¹⁹

treasury.gov.uk/media/5CC/43/pbr06_completereport_1439.pdf (indicating that "... attempted MTIC fraud was between 3.5 billion pounds and 4.75 billion pounds in 2005-06; with an estimated negative impact on VAT receipts during the year of between 2 billion pounds [or 2.98 billion euro] and 3 billion pounds [or 4.47 billion euro].") See also: H.M. Revenue & Customs, MEASURING INDIRECT TAX LOSSES – 2006 6 & 21-25 (Dec. 2006) available at: http://customs.hmrc.gov.uk/channelsPortalWebApp/channelsPortalWebApp.portal?_nfpb=true&_pageLabel=pageLibrary_ConsultationDocuments&propertyType=document&columns=1&id=HMCE_PROD1_026423 (setting out the methodology used to determine estimates in the 2006 PRE-BUDGET REPORT.)

¹⁴ European Commission, Communication of the Commission to the Council in accordance with Article 27(3) of Directive 77/388/EEC, COM(2006) 404 final at 4 (indicating that German estimates of 2006 losses to all types of VAT fraud are 2% of total VAT receipts – or 8 to 10 billion euro – with roughly one third attributable to missing trader fraud) available at [http://ec.europa.eu/taxation_customs/resources/documents/COM\(2006\)404_en.pdf](http://ec.europa.eu/taxation_customs/resources/documents/COM(2006)404_en.pdf); Euro2day, *ECOFIN EU Presidency's Steinbrueck says Reverse Charge VAT on Agenda for April*, (Jan. 30, 2007) available at <http://www.euro2day.gr/articlesfna/27924825/> ("German finance minister Peer Steinbrueck said ... VAT fraud costs €8-10 billion in Germany annually ...").

¹⁵ *Supra* note 4.

¹⁶ Europol Press release, *Experts discuss 'Missing Trader Inter-Community Fraud'*, (Dec. 13, 2006) available at: <http://www.europol.europa.eu/index.asp?page=news&news=pr061213.htm> (reporting on meeting at Europol of 40 experts from 22 E.U countries gathered to discuss ways to fight MTIC fraud where a report from Eurocanet, the European Commission sponsored task-force on fraud provided figures that MTIC fraud cost the EU €23 billion between June 2005 and June 2006).

¹⁷ Richard T. Ainsworth, *CO2 MTIC Fraud – Technologically Exploiting the EU VAT (Again)*, 57 TAX NOTES INT'L 357, 370-72 & Figure 3 (Jan. 25, 2009).

¹⁸ Fraud will increase when the supply is made in goods. The reason is that the fraudster's distribution lines are shortened. Instead of transporting goods to back and forth to Dubai (a 2 or 3 day journey), the goods can be circulated within the EU (transit time of 1 day or less). The carousel simply moves faster.

¹⁹ Europol Press Release, *Carbon Credit fraud causes more than 5 billion euros damage for European Taxpayer* (Dec. 9, 2009) available at: <http://www.europol.europa.eu/index.asp?page=news&news=pr091209.htm>.

Reckon LLP completed a study of the VAT tax gap for the EU Commission in 2009 (also based on 2006 data). It indicated that the two most significant research efforts to measure MTIC fraud were those of HMRC (mentioned above) and another study by the Belgian Finance Ministry.²⁰ The Belgian estimates (which also do not include CO2 MTIC) are somewhat lower than the Europol estimate for the entire EU (€19.9 billion as compared with €23 billion). However, the Belgian estimate for MTIC in the UK was considerably higher than the UK's estimate of its own losses (€8.85 billion as compared with the UK's range of between £2.98 and £4.47). Reckon cannot explain the differences.²¹

The only conclusion that can be drawn about the size of the MTIC problem in the EU is that current estimates are highly speculative, and they clearly miss entire classes of fraudulent transactions. EU losses are enormous. However, because VoIP missing trader fraud is not confined to the EU there is much more to measure, and it will take considerable international cooperation to combat it.

As a result, the issues raised here impact OECD discussion on harmonizing VAT/GST rules in services and intangibles,²² just as much as they impact EU efforts to combat services and intangibles MTIC in Europe.²³ There is a global rippling effect to MTIC fraud (once it enters service and intangibles markets) that needs to be more fully considered.

When MTIC was seen as a problem confined to goods (cell phones, computer chips, perfumes and precious metals), global markets were protected by customs enforcement. However, in services and intangibles there are no customs borders. Third countries are very clearly involved in the global VoIP market, just as they are actively engaged in selling emission allowances. Both markets trade globally, and both are vulnerable to missing trader fraud. As a result the further discussions of the OECD with respect to consumption tax issues in the global trade in emissions certificates is impacted by this study.²⁴

²⁰ RECKON LLP, STUDY TO QUANTIFY AND ANALYZE THE VAT GAP IN THE EU-25 MEMBER STATES, Sept. 21, 2009, (analysis based on 2006 data for all EU Member States, except Cyprus) *available at*: <http://www.reckon.co.uk/item/cb5873cb>.

²¹ *Id.*, at ¶ 383.

²² There are three reports of OECD activity in this area. *See*: OECD, COMMITTEE ON FISCAL AFFAIRS, WORKING PARTY NO. 9 ON CONSUMPTION TAXES, APPLYING VAT/GST TO CROSS-BORDER TRADE IN SERVICES AND INTANGIBLES – EMERGING CONCEPTS FOR DEFINING PLACE OF TAXATION – Invitation for Comments (January 2008) <http://www.oecd.org/dataoecd/42/11/39874228.pdf>; OECD, COMMITTEE ON FISCAL AFFAIRS, WORKING PARTY NO. 9 ON CONSUMPTION TAXES, APPLYING VAT/GST TO CROSS-BORDER TRADE IN SERVICES AND INTANGIBLES – Outcome of the First Consultation Document (June 2008) <http://www.oecd.org/dataoecd/11/31/40931170.pdf>; OECD, COMMITTEE ON FISCAL AFFAIRS, WORKING PARTY NO. 9 ON CONSUMPTION TAXES, APPLYING VAT/GST TO CROSS-BORDER TRADE IN SERVICES AND INTANGIBLES – EMERGING CONCEPTS FOR DEFINING PLACE OF TAXATION – SECOND CONSULTATION DOCUMENT – Invitation for Comments (June 2008) <http://www.oecd.org/dataoecd/10/13/40931469.pdf>

²³ Most recently *see*: Report from the Commission to the Council and the European Parliament, On the application of Council Regulation (EC) no 1798/2003 concerning administrative cooperation in the field of value added tax COM(2009) 428 *available at*: http://ec.europa.eu/taxation_customs/resources/documents/taxation/tax_cooperation/combating_tax_fraud/COM_2009_0428_EN.pdf

²⁴ OECD, CENTER FOR TAX POLICY AND ADMINISTRATION, COMMITTEE ON FISCAL AFFAIRS, TAXATION AND TRADABLE PERMITS (Note by the Secretariat), CTPA/CFA(2009)31REV1 (July 1, 2009).

VoIP

VoIP (voice over internet protocol) is a general term for a family of transmission technologies concerned with the delivery of voice communications over IP networks such as the internet. There are retail and wholesale markets for VoIP. Although the market is being driven by retail demand,²⁵ the major areas for VoIP MTIC are in the wholesale market.

Retail VoIP. At the retail level, B2C [business-to-consumer], it is relatively easy to see how VoIP functions. There is an origin and a termination function and both are provided by the VoIP retailer for a fee – or in the case of retailers like Skype basic services are free with an option to purchase premium service.

At origin, an individual with a high-speed internet connection engages a VoIP provider to allow him to make calls over the internet. The reason for doing so is almost always the cost savings.²⁶ The critical piece of equipment that the consumer needs to connect a telephone through the internet is a broadband telephone adaptor. The adaptor is connected on one end to the consumer's telephone and on the other to the consumer's cable/DSL modem or router. The adaptor splits the high-speed broadband connection allowing both data and voice to travel over

²⁵ Fiona Chau, *Wholesale VoIP posed for takeoff: As VoIP Gains Credibility Around the Globe, Carriers Identify an Opportunity in the Growing Wholesale Market*, Telecom Asia (March 2007). Referencing an independent market study by In-Stat, and interviews with the authors:

According to a report released in January by In-Stat Research, wholesale VoIP is poised to grow around the world. "As retail VoIP expands, wholesale VoIP will accelerate quickly," says Bryan Van Dussen, In-Stat analyst. "The largest segment remains international VoIP, but we expect the market for local [US] services to surge from 12% of all revenues to 27% by 2010"

In-Stat found that in the US where VoIP is extremely popular, consumer VoIP adoption will drive wholesale VoIP revenues to \$3.8 billion by 2010 from \$1.1 billion in 2006. International wholesale VoIP termination/origination revenues, however, are experiencing declining growth rates, according to In-Stat. The research firm also predicts that long-haul wholesale VoIP will experience significant migration from TDM services during the next few years and account for a majority of the international market by 2009.

Available at: http://findarticles.com/p/articles/mi_m0FGI/is_3_18/ai_n19041281/?tag=content;col1. See also:

Peter Coles & Thomas R. Eisemann, *Skype HARVARD BUSINESS SCHOOL CASE STUDY 9-806-165* (Dec. 3, 2009) 3

When it was acquired by eBay, Skype had 54 million registered users and 2.7 million premium service customers. eBay projected that Skype would generate \$60 million in revenue during 2005 and \$200 million in 2006. Long-term operating margins were expected to equal 20% to 25% of revenue. [Imran Khan, *eBay*, JP Morgan Equity Research 5 (Sept. 29, 2005)] Those estimates proved reasonably accurate; by the ends of 2008, Skype had over 400 million registered users, with revenue of \$191 million in 2006, increasing to \$550 million in 2008. [eBay 2008 ANNUAL REPORT 1 & 51].

²⁶ Peter Coles & Thomas R. Eisemann, *Skype HARVARD BUSINESS SCHOOL CASE STUDY 9-806-165* (Dec. 3, 2009) 12, Exhibit 3: Response to "Why are you interested in using VoIP?" [Maribel Lopez, *Who wants to buy VoIP?* Forrester Research (Jan. 2005) Figures 5 and 6-1]

I want to save money	74%
I like to try new technologies	54%
I want to get access to free features (e.g., voicemail, caller ID)	39%
I want new services not available on my current phone line (online call history, ability to control phone features from the Net, etc.)	32%
I need another phone line for home/personal use	14%
I need another phone line for work/business use	6%
I want a telephone number in a different area code	2%

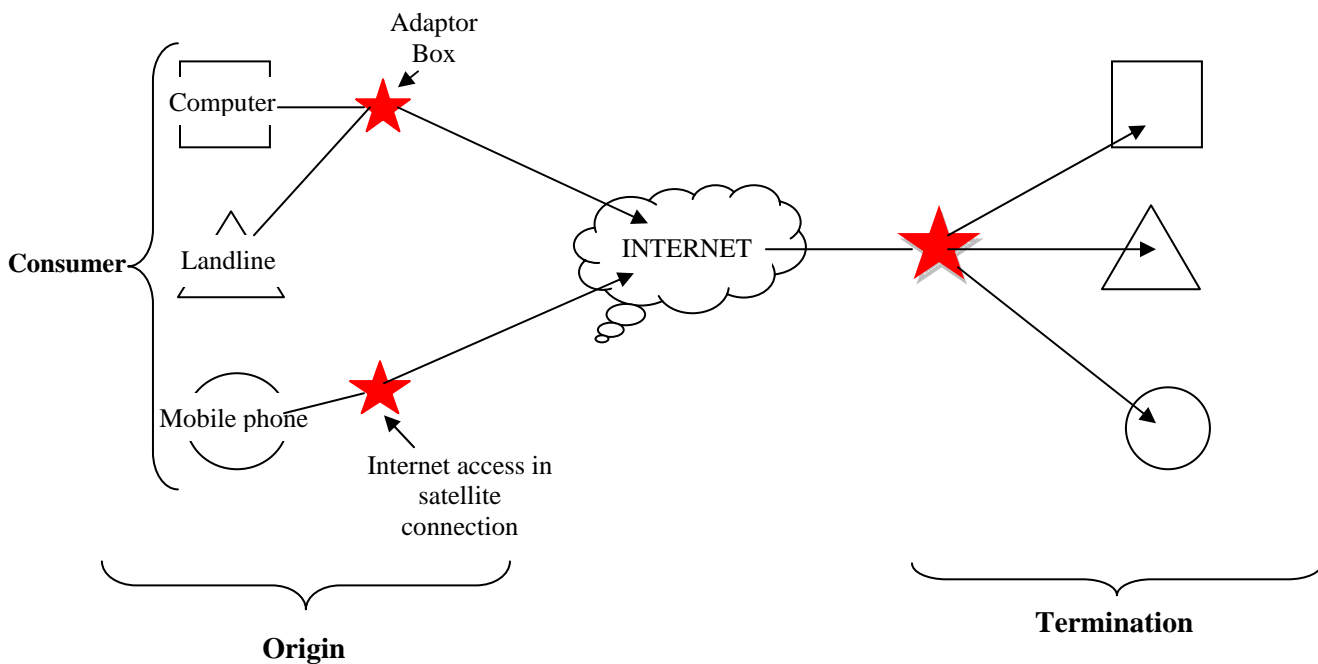
Multiple responses allowed.

the same internet line. With a headset the consumer can also make calls directly from his computer. Mobile phones can be VoIP enabled. In this case, when a long distance call is placed the mobile phone automatically routes the call through the internet.

This market is set for further expansion. For example, the first WiMAX mobile technology platform has been launched by Airspan. This is a WiFi network that uses the 2.5 GHZ Band, and allows users to access broadband almost anywhere in the world. The service will enable VoIP, Video and internet access without roaming charges.²⁷

At termination (the other end of the call) the consumer's voice transmission exits the internet and the VoIP service provider performs the adaptor's function in reverse. The voice transmission is securely transferred into the local telephone network (land line; computer terminal; or mobile phone). VoIP can be used from computer-to-computer. Free services like Skype will facilitate this. However VoIP really came into its own when full functionality could be provided to users at both origin and termination – in other words, when calls could be placed *from* computer, landline or mobile phone *to* computer, landline or mobile phone.

FIGURE 1 – Retail VoIP



The reason for VoIPs cost saving is the internet is free (after payment of a minimal charge to access the internet). Communicating through a public switched telephone network (PSTN) is much more expensive. The cost for using land lines increase over longer distances;

²⁷ *Airspan Solution for the 2.5 GHz Band*, (undated) (indicating that the reason Airspan selected the 2.5GHz band is that “it is one of the most widely available in the world ... throughout the US, Europe, Asia, and several countries in Latin America and Middle East ...” available at: www.airspan.com/solutions_2500.aspx/; Airspan, *Mobile WiMAX Security* (2007) available at : http://www.airspan.com/pdfs/WP_Mobile_WiMAX_Security.pdf

but for VoIP distance is irrelevant. Time-division multiplexing (TDM) made PSTN more efficient for a while,²⁸ but even at extremely high density levels PSTN/TDM remains a land lines based technology and cannot compete. The industry believes that VoIP will replace PSTN/TDM.²⁹

Business VoIP. Businesses purchase VoIP at wholesale. It is easy to see why. Assume a major oil company in the Netherlands has critical production facilities in Nigeria. Assume further that calls are being placed between the Netherlands and Nigeria 24/7, sometimes with as many as 20 lines being used at any one time. With a private automated branch exchange (PBAX) and least cost routing (LCR) functionality the Netherlands headquarters should do the following:

- Locate a Nigerian VoIP termination company, and purchase from them 10,000 minutes (30% mobile and 70% landline);
- Set the PBAX LCR to send all calls through the internet to this termination company.

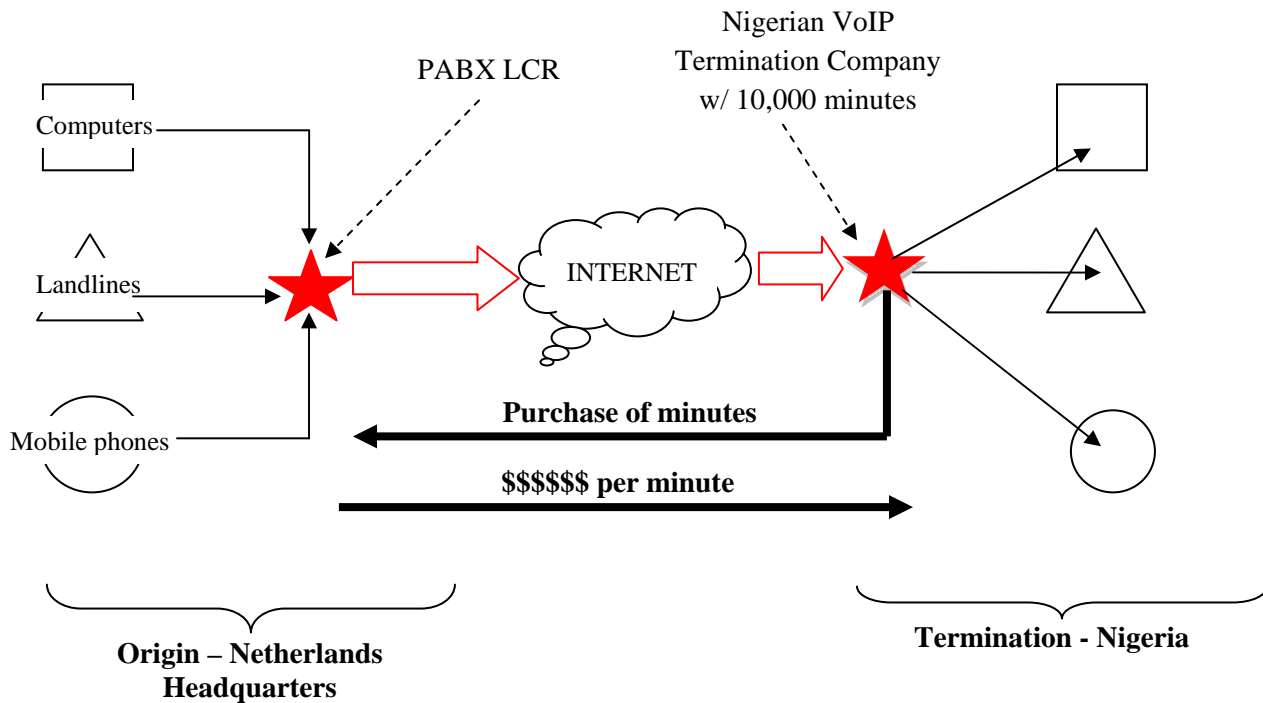
The net effect would be that full access to the Nigerian communications market would be available for nothing more than the *Nigerian* cost of access minutes. Making calls from Amsterdam in the Netherlands to Lagos in Nigeria would not be more expensive than a local call in Lagos.

²⁸ With TDM two or more bits or streams of information appear to travel simultaneously through one communication channel. In fact what TDM does is to organize voice so that multiple streams physically take turns using the same channel. In the EU 30 voice streams are common; in the US the norm is 24. It is possible to achieve *higher order multiplexing* of up to 120 channels.

²⁹ Fiona Chau, *Wholesale VoIP posed for takeoff: As VoIP Gains Credibility Around the Globe, Carriers Identify an Opportunity in the Growing Wholesale Market*, Telecom Asia (March 2007)

The days of PSTN/TDM switched voice are numbered. With telecom carriers increasingly moving toward next-generation networks, all voice will ultimately be carried through IP. While industry players agree that pure IP-to-IP VoIP will ultimately replace TDM services, they agree that this is by no means an overnight change. And the pace of substitution is dependent on telcos' schedules. "We are definitely going for all IP, but sometimes this is also dictated by our partners' own schedules," says Dr. Kuang Y. Chow, AT&T Wholesale's regional sales VP for Asia Pacific. available at: http://findarticles.com/p/articles/mi_m0FGI/is_3_18/ai_n19041281/?tag=content;coll.

FIGURE 2 – Wholesale VoIP



VoIP market. Vendors in the VoIP market buy and sell: (1) equipment, and (2) minutes. This is not a labor intensive industry, so aside from an initial investment in switching equipment, most of the effort goes into commodity side of the business - finding minutes that can be bought low and re-sold slightly higher. Highly automated switching equipment can be expensive. Access minutes are bought and sold for fractions of a penny through highly competitive exchanges that operate almost entirely over the internet.

For example, the assets of the Nigerian VoIP termination company in the previous example might not be more than a single machine in a Lagos office building that is (a) connected directly to the internet backbone, (b) has a high-capacity landline connection into the local telephone exchange, and (c) is tied into the domestic mobile phone network through a series of SIM³⁰ cards that are inserted into it. Hypermedia Systems Ltd. sells the VoIP GSM Gateway – for Call Termination for \$23,990.³¹ It has 72 GSM ports and holds 288 SIM cards.³² If this unit

³⁰ Subscriber Identity Module (SIM) cards securely store the service subscriber's key used to identify a subscriber on mobile telephony devices (such as mobile phones or computers). The SIM card allows the user to change phones by simply removing the SIM card from one mobile phone and inserting it into another mobile phone or broadband device. A SIM card contains a unique serial number, internationally unique number of the user, security information and ciphering information, temporary information related to the local network (also temporary local ID that has been issued to the user), a list of the services the subscriber has access to, and two password (PIN for usual use and PUK for unlocking).

³¹ Rami Hershkovitz, Vice President of Sales, Hypermedia Systems Ltd. (personal e-mail communication) January 31, 2010 (on file with author). Delivery by FedEx, payment in advance, US currency only.

³² Available at: <http://www.VoIP-info.org/wiki/view/VOIP+GSM+Gateways>

was installed in Nigeria it could move 72 simultaneous calls from the internet into the domestic communications network. Hypermedia's VoIP GSM Gateway can be remotely operated, and if time on the SIMs cards expires they can be reloaded without physically visiting the facility. Once installed, operating 24/7, and at an average price per minute the capital invested in Hypermedia's VoIP GSM Gateway would be recovered in 11 to 12 days.³³ There are additional costs for the SIM cards, local landline access, internet access and a reliable power supply. All of this can be estimated at about \$2,000 per month or about another day of usage.³⁴

Fully connected and with a full complement of SIM cards Hypermedia's VoIP GSM Gateway is similar to a warehouse; a warehouse loaded with access minutes into the Nigerian communications grid. The business model for this termination company is to re-sell access to individuals seeking to make VoIP calls into Nigeria.

The minutes are sold like a commodity. Heavy buyers of minutes include well known companies like Skype,³⁵ and lesser known companies like VoIP Innovations,³⁶ or aql.³⁷ VoIP providers need minutes at termination to complete their service.³⁸ The price that the Nigerian termination company can charge for its minutes depends on the demand for termination in Nigeria. These minutes can be offered for sale directly, or through a broker.³⁹ Brokers will bundle and unbundle minutes to meet the needs of a buyer.

³³ The average price for a landline call is around \$0.01 to \$0.02 per minute. Assume an average \$0.02 per minute, and further assume that the Hypermedia VoIP GSM Gateway operates 24/7. The results are: \$23,990.00/72 channels/ \$0.02 = 16,660 minutes, which equals 278 hours, and which further equals 11.58 days.

³⁴ Assume we locate Hypermedia's VoIP GSM Gateway in the UK. If we purchase SIM cards from O2 (a leading provider of cell phones, broadband access, and SIM cards) the cost of a SIM card is £15, and 72 cards would cost £1,080 or \$1,725 (at current rates). Land line connections, the power supply and a minimal rental charge for housing the unit might cost an additional \$300. O2-to-O2 calls are free, so it would be possible to limit the termination minutes sold to mobile O2 connections, and this would eliminate the need to refresh expired the SIM cards. See: <http://www.o2.co.uk/>

³⁵ Skype is a major player in this market. By mid-2008 100 billion VoIP minutes had been logged on Skype, and at any one given time there are 10 million simultaneous users on Skype. All of these calls need voice termination services. See: Michael Arrington, Google/Skype Acquisition or Partnership Imminent? Tech Crunch (on-line journal) Apr. 1, 2008, available at: <http://www.techcrunch.com/2008/04/01/googleskype-acquisition-or-partnership-imminent/>

³⁶ VoIP Innovation, located in Pittsburg Pennsylvania, has an extensive carrier-grade voice network with coverage in over 7,000 rate centers across the US. Available at: <http://www.VoIPinnovations.com>.

³⁷ Aql is a UK company, located in West Yorkshire. It provides global VoIP to Deutsche Bank, Motorola, Merck Pharmaceuticals, Stagecoach Group Plc, Man Financial, The Salvation Army and BP. Available at: <http://www.aql.com/telecoms/wholesale-voice>.

³⁸ VoIP-Info.org lists hundreds of companies providing VoIP termination services in each of the EU Member States, each of which need to buy minutes over the net either directly from seller or through brokers. Available at: <http://www.VoIP-info.org/wiki/view/VOIP+Service+Providers+Business+Europe>

³⁹ See for example see: VoIP Wholesale Brokers at <http://www.voipwb.com/>. This web page invites new brokers to sign up with the following introduction:

It's no surprise that VoIP is taking over the world of telecommunications. Now you have the opportunity of a lifetime – the chance to be an important part of the fast-growing, highly lucrative industry. You can now capture your share of this non-stop growth. But unlike other wholesale brokers, you don't need to invest tens of millions of dollars to have your own Vonage-type business.

See also: Complete Communications & IT Brokers, at: <http://www.ccitbrokers.com.au/voip.html>; VoIP Exchange – Direct Traffic Exchange, at: <http://www.voiptrade.info/>; E-Exchange (a Japanese VoIP brokerage) at,

The commodity market for minutes is entirely free from regulation. VoIP services however can be regulated or unregulated, depending on the jurisdiction. Developing countries tend to regulate (or prohibit) VoIP, developed countries tend not to – treating VoIP as more like the internet than a telephone exchange. A Harvard Business School case on Skype explained:

Many developing nations relied heavily on fees earned by state-owned telecommunications carriers from international long-distance calls as a major source of taxes and foreign currency, and thus had an incentive to prohibit services like Skype's. Other governments were concerned about their inability to monitor VoIP communications for security or censorship purposes.⁴⁰

Several Middle Eastern countries have blocked VoIP (Oman,⁴¹ Qatar,⁴² and United Arab Emirates⁴³). In Latin America Belize blocks VoIP,⁴⁴ Cable and Wireless (a UK company with subsidiaries in the Caribbean) had been blocking VoIP (but changed its policy recently),⁴⁵ Panama enacted laws to tax VoIP calls,⁴⁶ Brasil Telecom in Brazil began blocking VoIP traffic so that they could “regulate” IP telephony within Brazil and stop ongoing “revenue leakage” due to VoIP,⁴⁷ and the leading Mexican telecommunications carrier has blocked Skype.⁴⁸ In Asia China began experiments with blocking VoIP,⁴⁹ and in Bangladesh VoIP remains illegal even though 50%⁵⁰ of all international calls are made with VoIP.⁵¹

In the US the Federal Communications Commission prevents blocking of VoIP. A North Carolina telecommunications carrier (Madison River) was fined by the FCC for its efforts to

<http://voip.meetvoip.com/>; Talking Platforms Group – VoIP Deployments and Resellers World Wide at: <http://www.talkingplatforms.com/>.

⁴⁰ Peter Coles & Thomas R. Eisemann, *Skype* HARVARD BUSINESS SCHOOL CASE STUDY 9-806-165 (Dec. 3, 2009) 7

⁴¹ Ted Wall, *Government of Oman blocking Skype*, THEVOIPWEBLOG (June 20, 2005), available at:

<http://VoIP.weblogsinc.com/2005/06/20/government-of-oman-blocking-skype/>

⁴² Russel Shaw, *Is Qatar blocking VoIP calls?* ZDNET (Dec. 12, 2005) available at: <http://blogs.zdnet.com/ip-telephony/index.php?p=793>

⁴³ Phil Wolff, *UAE blocks Skype.com*, SKYPE JOURNAL (April 24, 2005) available at:

http://www.skypejournal.com/blog/archives/2005/04/uae_blocks_skyp.php.

⁴⁴ Russel Shaw, *Trouble in the Tropics: Belize telco accused of Blocking VoIP*, ZDNET NEWS (April 24, 2006) available at: <http://blogs.zdnet.com/ip-telephony/?p=1048>

⁴⁵ *10 ISPs and countries known to have blocked VoIP*, VoIP-Sol.com, available at: <http://www.VoIP-sol.com/10-isps-and-countries-known-to-have-blocked-VoIP/>

⁴⁶ Ben Charny, *VoIP gets level pegging in Panama*, CNET NEWS.COM (January 20, 2004) available at:

http://news.cnet.com/VoIP-gets-level-pegging-in-Panama/2100-7352_3-5144030.html

⁴⁷ *10 ISPs and countries known to have blocked VoIP*, VoIP-Sol.com, available at: <http://www.VoIP-sol.com/10-isps-and-countries-known-to-have-blocked-VoIP/>

⁴⁸ Ben Charny, *Mexican telephone operator under VoIP fire*, CNET NEWS.COM (April 25, 2005) available at:

http://news.cnet.com/Mexico-telephone-operator-under-VoIP-fire/2100-7352_3-5681542.html.

⁴⁹ *China Telecom to block Internet Telephony providers like Skype*, FORBES.COM (Sept. 11, 2005) available at: <http://www.forbes.com/feeds/afx/2005/09/11/afx2217147.html>.

⁵⁰ Telecommunications Infrastructure Operators of Bangladesh, *Over half of O/S calls go by Illegal VoIP*, Phone.com.bd (April 13, 2009) available at: <http://www.phone.com.bd/2009/04/over-half-of-os-calls-go-by-illegal-VoIP-tiob/>

⁵¹ Mohamed Hasan, *60,000 phone connections cut for illegal international call termination*, THE DAILY STAR Jan. 24, 2010) available at: <http://www.thedailystar.net/story.php?nid=43932>.

block VoIP calls. Madison River now provides VoIP to its customers.⁵² Similarly, Clearwire Corp., an operator and provider of broadband networks from Kirkland, Washington began blocking VoIP calls in 2005 but stopping abruptly after the FCC action in Madison River. Clearwire also began offering its own VoIP service.⁵³

VoIP exchanges. The exchanges where VoIP minutes are bought and sold at wholesale are unregulated internet marketplaces. There are a large number of exchanges. One of the most active is VoIP Business Forum. It characterizes itself as the “market place for VoIP minutes, hardware and software.” There are two main auction sites for minutes, one to buy VoIP minutes (VoIP Origin),⁵⁴ the other to sell VoIP minutes (VoIP Termination).⁵⁵

The exchange where parties seek to buy VoIP minutes has 22,360 discrete listings on 430 pages (52 requests to buy per page). The exchange where parties seek to sell VoIP minutes has 25,064 discrete listings on 482 pages (52 requests to buy per page). Most buy or sell lines were in fact multiple listing. For example, one buyer of minutes (VoIP Origination) was looking minutes in Liechtenstein, the United Arab Emirates and Australia; one seller of minutes (VoIP Termination) was seeking to sell minutes in India, Pakistan, Bangladesh, Sri Lanka and the Philippines.

VoIP MTIC

How would a fraudster with good knowledge of VoIP, and good knowledge of MTIC take advantage of the EU VAT? We have no case-derived fact patterns to explore. VoIP MTIC has apparently not been identified (yet). However, based on what we have seen in cell phones, computer chips and CO2 permits there are at least four places where VoIP transactions appear vulnerable to large scale MTIC fraud. Listed in order of their fiscal impact they are: (1) broker-to-large business; (2) broker-to-broker; (3) VoIP termination; and (4) broker-to-retailer-to-public. Each permutation will be considered below, but first we need to ask: Why would VoIP attract MTIC fraudsters in the first place?

Simply put, if we think like a fraudster, we will be drawn to transactions where two things occur: (1) there is a favorable statutory alignment – the rules, regulations and administrative procedures in a jurisdiction align to allow the fraud; and (2) the size of the *take* is worth the *risk* (a criteria that in large part depends on the ease with which an exit strategy can be devised).

Statutory alignment. MTIC opportunities arise (in goods or services) whenever a fraudster is able to align: (1) an obligation to reverse charge on a purchase/ or the grant of an exempt supply, coupled with (2) a requirement to collect VAT on an onward supply (a taxable resale of the same supply). All MTIC fraud fits this pattern. VoIP MTIC is no different. When a

⁵² Declan Mculagh, *Telco agrees to stop blocking VoIP calls*, ZDNET NEWS (Mar. 3, 2005) available at: http://news.zdnet.com/2100-1035_22-141592.html

⁵³ *10 ISPs and countries known to have blocked VoIP*, VoIP-Sol.com, available at: <http://www.VoIP-sol.com/10-isps-and-countries-known-to-have-blocked-VoIP/>

⁵⁴ VoIP Business Forum (Buy VoIP Minutes – VoIP Origination) available at: <http://voip-control.com/forum-2.html> [accessed on January 25, 2010].

⁵⁵ VoIP Business Forum (Sell VoIP Minutes – VoIP Termination) available at: <http://voip-control.com/forum-1.html> [accessed on January 25, 2010].

fraudster finds this alignment (on a purchase and re-sale of a supply) he will not report either transaction and then disappear (VAT in-hand) when the tax authority gets curious.

VoIP is a service. Thus, the rules in the EU VAT Directive that produce the first condition are in Articles 44 and 196; the rules that produce the second condition are in Articles 44 and 193. Article 44 is the general rule for services:

The place of supply of services to a taxable person acting as such shall be the place where that person has established his business. ...⁵⁶

Article 196 obliges the buyer (not the seller) to remit VAT when the buyer is established in a different Member State. The short-hand expression for this is a “reverse charge.” It states:

VAT shall be payable by any taxable person, or non-taxable legal person identified for VAT purposes, to whom the services referred to in Article 44 are supplied, *if the services are supplied by a taxable person not established within the territory of the Member State.* (emphasis supplied)⁵⁷

When services are supplied between taxable persons established within the same Member State the place of supply rules are irrelevant,⁵⁸ but the reporting obligations are different. Article 193 states:

VAT shall be payable by any taxable person carrying out a taxable supply of goods or services, except where it is payable by another person in the cases referred to in Articles 194 to 199 and Article 202.⁵⁹

The “take” and the “risk.” The VoIP market is huge (\$3.3 billion in 2010) and growing (the compounded annual growth rate is 31.4%).⁶⁰ This kind of rapidly growing massive

⁵⁶ VAT DIRECTIVE, Art. 44. The SIXTH COUNCIL DIRECTIVE of 17 May 1977 on the harmonization of the laws of the Member States relating to turnover tax – Common system of value added tax: uniform basis of assessment (77/388/EEC) 1977 O.J. (L 145) 1 was repealed and replaced on November 28, 2006 with the RECAST VAT DIRECTIVE. Council Directive 2006/112/EC on the Common system of value added tax, O.J. (L 347) 1. DIRECTIVE 2008/8/EC made significant changes to the place of supply rules for services, effective January 1, 2010. Citations throughout this document will be to the most updated version, and will be referenced as the VAT DIRECTIVE. Prior to January 1, 2010 this rule was contained in Article 56(1) which stated:

The place of supply of the following services ... to taxable persons established within the Community but not in the same country as the supplier, shall be the place where the customer has established his business ...

(a) Transfers and assignments of copyrights, patents, licenses, trademarks and similar rights; ...

⁵⁷ VAT DIRECTIVE, Art. 196. Prior to January 1, 2010 Article 196 contained the same rule, although it was phrased differently:

VAT shall be payable by any taxable person *to whom the services* referred to in Article 56 *are supplied* ... (emphasis added)

⁵⁸ Prior to January 1, 2010, Article 43 contained a general place of supply rule that would apply in this situation. It stated:

The place of supply of services shall be deemed to be the place where the supplier has established his business or has a fixed establishment from which the service is supplied ...

⁵⁹ VAT DIRECTIVE, Art. 193.

⁶⁰ Globally the Telecommunications sector is growing in spite of the recent recession, and is expecting growth in the range of “... 13.8 percent over the next few years, reaching \$3.7 trillion by 2015.” Insight Research Press Release, *Worldwide Telecommunications Industry Growing at Double Digit Rate Despite Current Economic Turmoil* (Jan. 6, 2010) available at: http://www.insight-corp.com/pr/1_06_10.asp. Worldwide revenues were predicted to be \$1.5 trillion in 2010 with a compounded annual growth rate (CAGR) of 5.9%. Insight Research, *The 2006 Telecommunications Industry Review: An Anthology of Market Facts and Forecasts*, (January 2006).

international market - where new firms are the norm, not the exception – is the ideal breeding ground for MTIC. In addition, an ideal exit strategy is very obvious (if you have a good understanding of VoIP). Because the commodity being traded is *minutes* of telephone connection (access) into the local telephone market – a more ephemeral commodity than the digitized emissions certificates in CO2 MTIC.

VoIP minutes are traded in an unregulated internet marketplace. There is no independently verifiable paper trail. When minutes are used (consumed) everything about the transaction evaporates. Available access minutes can be stored and collected like inventory on SIMs cards and in the paid-up time of a landline connection. This inventory can be management (counted, valued, sold, and added to) remotely. As a result, VoIP MTIC is a very clean fraud - a fraud without a trail.

If a fraudster needs to disappear, the only asset “left behind” is a termination box. Although the termination box can be located in the jurisdiction where the fraud occurs (a high risk version of VoIP MTIC), in others instances it can be located in a foreign jurisdiction (a much safer kind of VoIP MTIC). In yet other permutations, there fraudster will not own a termination box, because the fraudster is manipulating an unsuspecting (legitimate) VoIP company – commonly called a buffer. In this case the VoIP MTIC fraudster is nearly invisible – he is just a broker of VoIP minutes on an unregulated internet market.

FOUR PERMUTATIONS OF VoIP MTIC

Broker-to-Large Business MTIC. The most serious VoIP MTIC permutations involve large corporations, government agencies or international organizations that enter the market for termination minutes, and purchase substantial quantities in bulk. These buyers pressure sellers to reduce prices. Fraudsters survive in this competitive market because their margins include the VAT. The fact situation below is a variation of Figure 2, above.

Assume a large or mid-sized business established in one Member State (France) has a substantial obligation to be in regular contact with clients in three other Member States (the UK, Spain and Italy). VoIP is considered, but rather than finding termination minutes on its own the French firm contracts with a local VoIP broker who provides end-to-end VoIP services.

If the French firm had paid France Telecom⁶¹ €1,000,000 annually for traditional PSTN/TDM services, VoIP might cut this bill in half without reduction in voice quality. The

But within this market it is the VoIP sector that is showing the most extra-ordinary growth. “Every two-guys-and-a-credit-card plus many better-funded operations are starting a VoIP business for the chance to be in the most rapidly growing of a \$1.2 trillion global telecom market that’s projected to grow to \$1.6 trillion by 2010.” VoIP-News, *State of the VoIP Market*, (2007) available at: <http://www.voip-news.com/feature/9/reports.html>. “VoIP has shifted from an emerging technology to a critical business solution,” according to Paris Burstyn, Director at Yankee Group. “We estimate the business VoIP market will grow at a CAGR of 31.4 percent to reach almost \$3.3 billion in 2010. *Accelerated Business VoIP Migration by AT&T and Avaya*, VoIP Monitor (Jan. 24, 2006) available at: <http://www.voipmonitor.net/2006/01/24/Accelerated+Business+VoIP+Migration+By+ATT+And+Avaya.aspx>. For example, in the UK (2009) VOIP was 12% of all telephony revenues (\$32bn out of a total of \$260bn). Juniper Research, *Press Release: Voice-over-IP (VoIP) to Account for Over 12% of All Telephony Revenues by 2009* (May 18, 2004) available at: <http://www.juniperresearch.com/shop/viewpressrelease.php?id=48&pr=29>

⁶¹ France Telecom is the main telecommunications company in France, third largest in the EU, and one of the largest in the world. It has 159 million customers, and 191,000 employees (half of whom are outside of France).

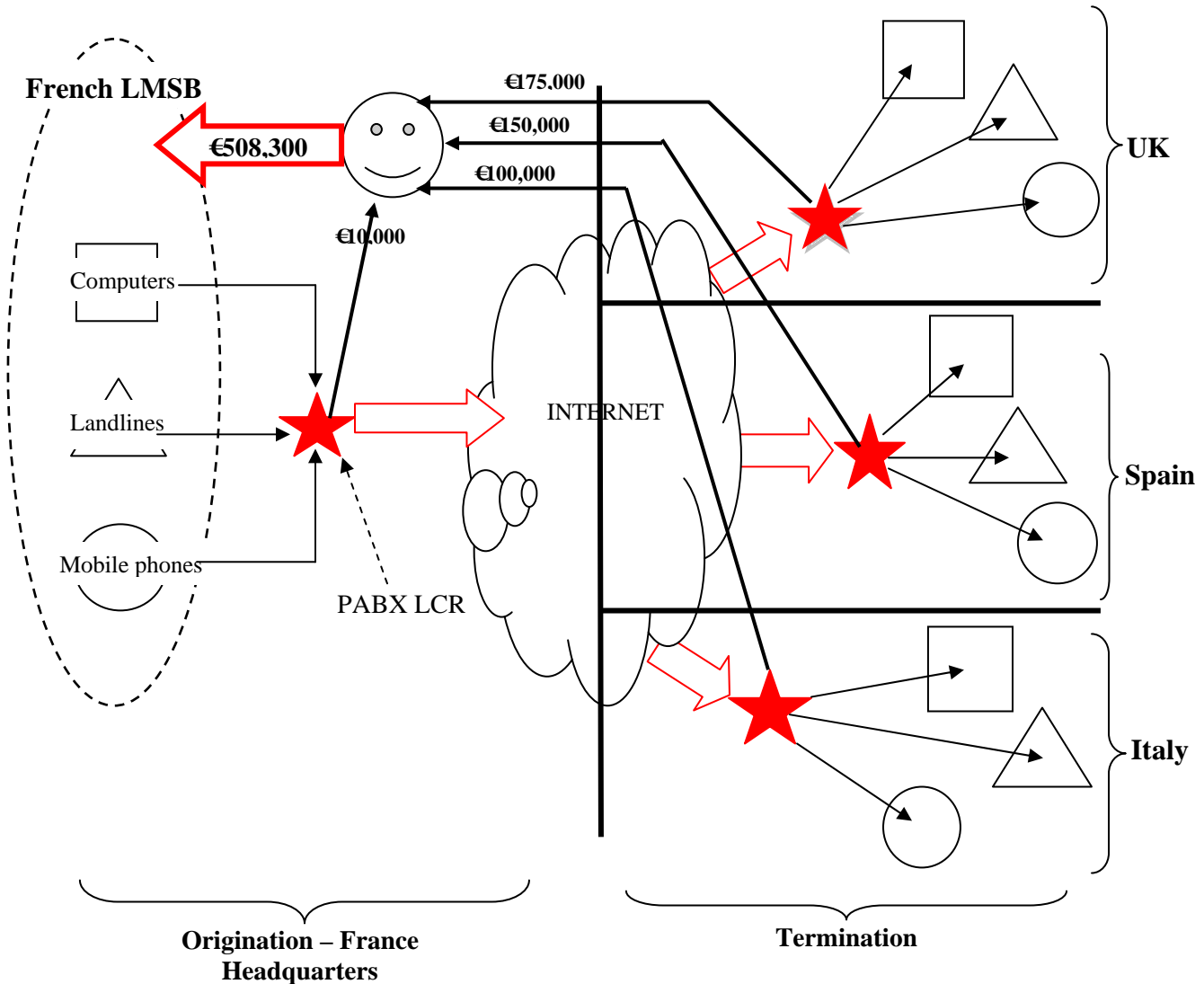
VoIP broker will reconfigure the company's PABX LCR to route calls to designated termination companies in the UK, Spain and Italy, and will further assure the company that there will always be adequate landline or mobile access minutes. Additional termination companies will be added if volumes increase or if the mix of landline/mobile minutes shift.

Figure 3 presents this scenario. It assumes that the termination companies located in the UK, Spain and Italy charge fees of: €175,000 (UK); €150,000 (Spain); and €100,000 (Italy). The scenario also assumes a fee of €10,000 for the PABX LCR re-configuration. By establishing itself in France, the broker places itself in a position to (a) make intra-community purchases of termination minutes (reverse charge) and then (b) re-sell the minutes plus VAT to the French firm. The broker could easily become a missing trader and retain €83,300.

The onward sale is for €508,300 [€425,000 in charges plus €83,300 in French VAT]. The French firm has reduced its telecommunications expense from €1,000,000 to €425,000 by simply routing landline and mobile calls through the internet along with its data connections. There is nothing in this transaction to arouse suspicion if the termination services function as advertised.

The VoIP broker may in fact be the owner of the termination companies in the UK, Spain and Italy. Each company may be no more than one (or more) Hypermedia VoIP GSM Gateway units in a storage closet of an office building. Because these units can be operated remotely the only concern would be having a reliable power source, a connection to the internet backbone, the local landline, and a full complement of SIMs cards for mobile communication.

FIGURE 3 – Broker-to-Large Company VoIP MTIC



This permutation of VoIP MTIC is not limited to large businesses. Government institutions have similar incentives to purchase large quantities of VoIP termination minutes from other Member States. It is somewhat ironic, but with EU governing bodies facing budget constraints the government itself may be encouraging wide use of VoIP and playing into the hands of fraudsters. The VAT in Belgium is 21%, and one can imagine that there is a fraud opportunity here.

Broker-to-broker MTIC. Many MTIC fraudsters use brokers to hide their transactions. It is a common pattern in the MTIC frauds uncovered in cell phone and computer chip markets.⁶² The same pattern has reportedly appeared in CO2 MTIC (although there are no litigated cases of published investigations to point to because enforcement in this area is in its infancy).⁶³

Assume a large French company making calls into the US decides to transition from traditional PSTN/TDM to VoIP. There are brokers in the US selling US termination minutes as well as brokers in France re-selling US minutes, but perhaps not always in the right mix between land and mobile networks or in the volumes or duration needed. A fraudster would attempt to take advantage of this mismatch in supply and demand by customizing packages of termination minutes to fit needs.

The fraudster would establish himself in France in this case, purchase US minutes on the market, package them to meet immediate local demand and then sell them (custom fit) to French broker. Because the fraudster's purchase of US minutes is subject to a reverse charge, and the re-sale to the French broker is made with VAT the rules are aligned for classic MTIC fraud.

⁶² See e.g., R v. Hashash [2006]EWCA Crim 2518 (Nov. 7, 2006) (unsuccessful appeal of a £177,453.33 confiscation order where defendant's company Compulog was determined to be an intermediary buffer in a carousel fraud); R v. Sandhu [2006] EWCA Crim 606 (Mar. 17 2006) (successful appeal of a conviction where appellant argued that he was an "innocent dupe" in a carousel fraud as the owner of a buffer company); R v. Corkhill [2006] EWCA Crim 635 (Mar. 3, 2006) (conviction upheld of an organizer of several carousel fraud chains – missing trader companies, buffers, and brokers – who continued to engage in transactions through her buffer companies after her arrest); Megtian Ltd. v. HMRC (LON/2007/0908) (Dec. 11, 2008) (denial of input tax deduction in a contra-trading carousel fraud where Megtian Ltd. functioned as the exporting broker on the "clean chain" of a well orchestrated fraud that always involved two or three buffer companies – outlined in the appendix of the decision, and an admission [in apparent error] that Megtian Ltd. had "actual knowledge" that it was engaged in VAT fraud); Honeyfone Ltd. v. HMRC LON/2007/0404 (May 2 2008) (denial of input tax deduction in a contra-trading carousel fraud where Honeyfone Ltd. was the exporting broker in the clean chain where the company "should have known" it was engaged in VAT fraud – each chain of transactions involving two or three buffer companies set out in Annex); Europeans Ltd. v. HMRC (LON/2007/811) (Nov. 26, 2008) (directing HMRC, and HMRC indicating that even though enforcement actions may be [and are] undertaken against both exporting brokers and buffers in a carousel [contra-trading] fraud that a double recover will not be sought).

⁶³ In the unfolding investigations into CO2 MTIC a lot of attention has been focused on the Danish registry, because of the alleged ease with which a person can register. Registration is a prerequisite for direct participation in the EU ETS. Once registered, an individual can function as a broker for other investors. For example, the UK registry is operated by the Department of Energy and Climate Change. DEPARTMENT OF ENERGY AND CLIMATE CHANGE, UK EMISSIONS TRADING SCHEME – EMISSIONS TRADING REGISTRY USER MANUAL 4 (March 2009) *available at*: http://etr.defra.gov.uk/pdf/ETR_User_Manual.pdf. This manual indicates:

The registry is an electronic, web-based system for holding and transferring greenhouse gas emission allowances. These allowances exist only in electronic form, each with a unique serial number. *Anyone wanting to hold, buy or sell allowances in the UK Emissions Trading Scheme will need to have an account in the registry which will record the holdings of allowances by all Participants*, tracking allowances from their initial allocation through all transfers of ownership right through to final cancellation or retirement. (emphasis added)

Holders of EUAs can trade these rights (like a commodity) on any one of six major European exchanges. However, the European Climate Exchange Home Page indicates under the heading: "What is the EU ETS?" that trading in emissions certificates is possible (through brokers), *available at*: <http://www.ecx.eu/What-is-the-EU-ETS>:

In order to make or take delivery of EUAs on ECX, one will need to open an account in one of the National Registries. There is, however, no requirement to open a registry account if one merely wishes to trade but has no intention of going to physical delivery.

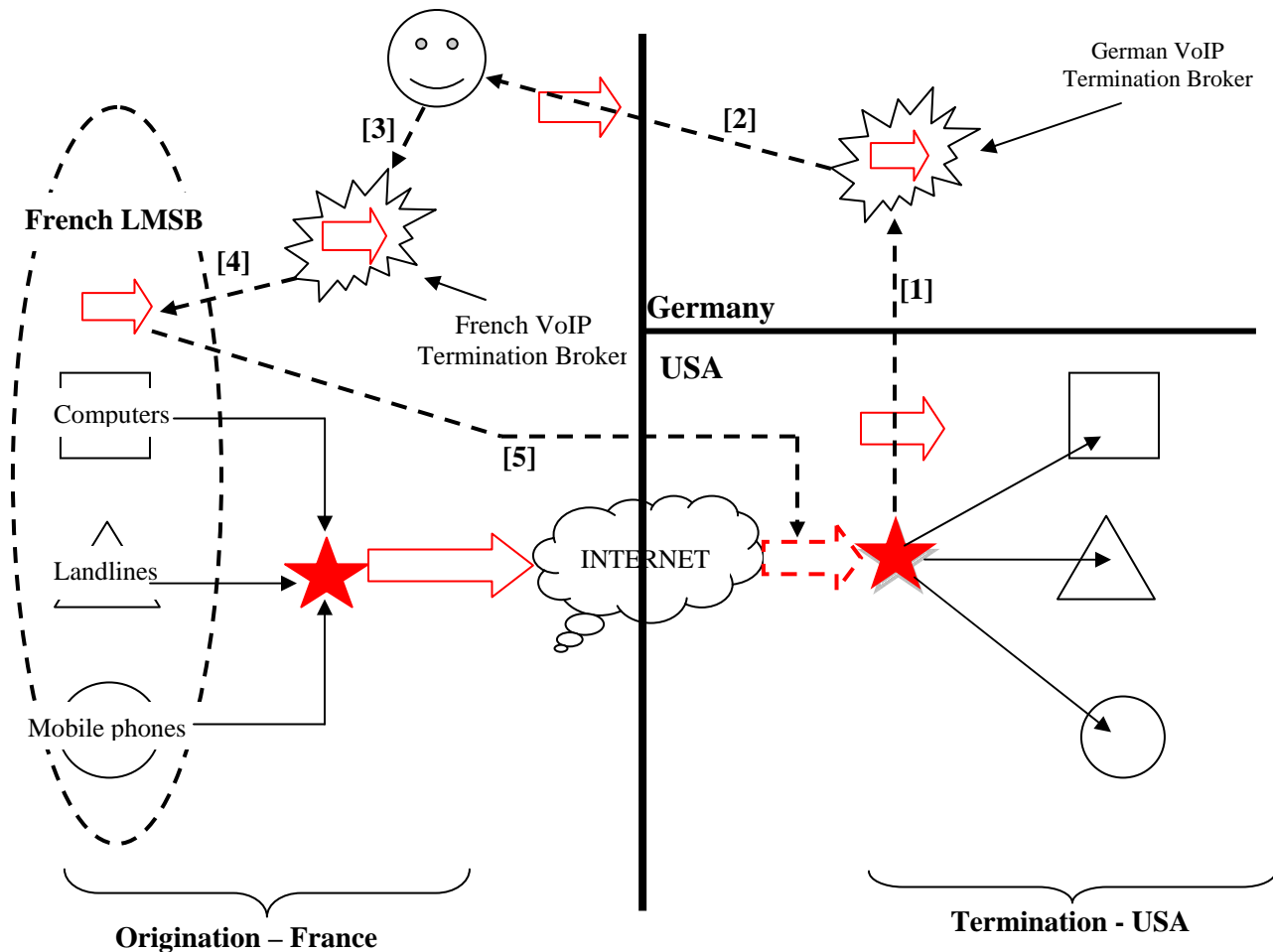
Fraudsters (of course) have no interest in taking physical delivery of emissions certificates. They will remain hidden behind their brokers who are registered.

Why wouldn't the French broker buy the US minutes directly? If the broker was legitimate the best price he could quote the French firm is at cost. The fraudster however has a different margin. If it intends to go missing, its margin (even selling at cost) is 19.6%. Essentially what happens then is that the French broker enters into a price reducing negotiation with the fraudster whereby they essentially split the 19.6% margin between them.

The broker-to-broker pattern can get even more complex if we recognize that termination minutes are continually sold and re-sold over the internet exchanges, prices rising and falling based on demand and supply variables. For example, after the Haitian earthquake the demand for Haitian termination minutes spiked (as relief agencies needed to make more calls into the Haitian mobile exchange), but the supplies of available minutes fell (because the number of functioning termination units was reduced). Haitian termination minutes have been selling at a premium lately.

Thus, in the current example, it is assumed that the US termination minutes are [1] sold by a US broker to a German broker (no VAT), who then [2] resells to the fraudster in France (zero-rated sale, subject to a French reverse charge). At this point the fraudster engages in a cost cutting negotiation with the French broker and the minutes are sold in bulk for less than cost [3]. French VAT is charged on the below-cost price (this is the fraudster's profit). The French broker then re-sells the US minutes to the French company [4] maybe with a mark-up (the input VAT paid to the fraudster is offset by the output VAT collected from the French firm). Finally, the French firm uses the US minutes in its business calls to the US [5] (the input VAT on the minutes is deducted as used).

FIGURE 4 – Broker-to-Broker VoIP MTIC

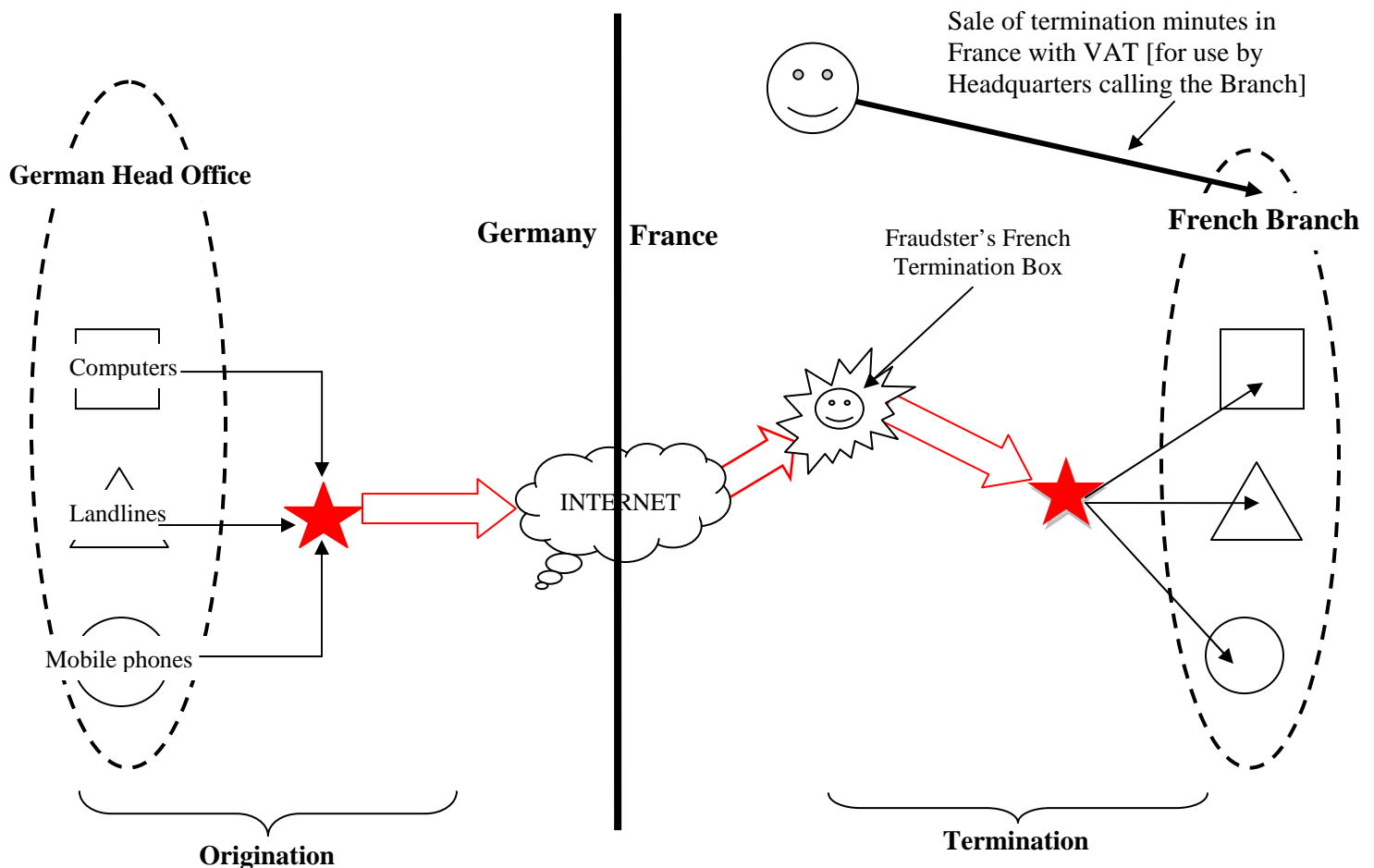


Neither the French firm nor the US termination company will have any knowledge of the fraud, both parties dealt with buffers. The German buffer has no reason to know of the fraud further down the chain. Only the French broker might have known that something was wrong, but it will simply say that it is bargaining as hard as possible to get the lowest price possible on US termination minutes (a price that is determined by US market factors a couple steps removed from its purchase).

Termination MTIC. This permutation of VoIP MTIC is higher risk for the fraudster than the other patterns. In this scenario a fraudster will set up a termination box like Hypermedia Systems' VoIP GSM Gateway in the jurisdiction where the fraud will occur. The termination box will be connected to the internet backbone, and the local telephone network through a landline. SIMs cards to connect to the domestic mobile phone network will be purchased from a broker in another Member State. The cards will be subject to a reverse charge, which the fraudsters will not perform.

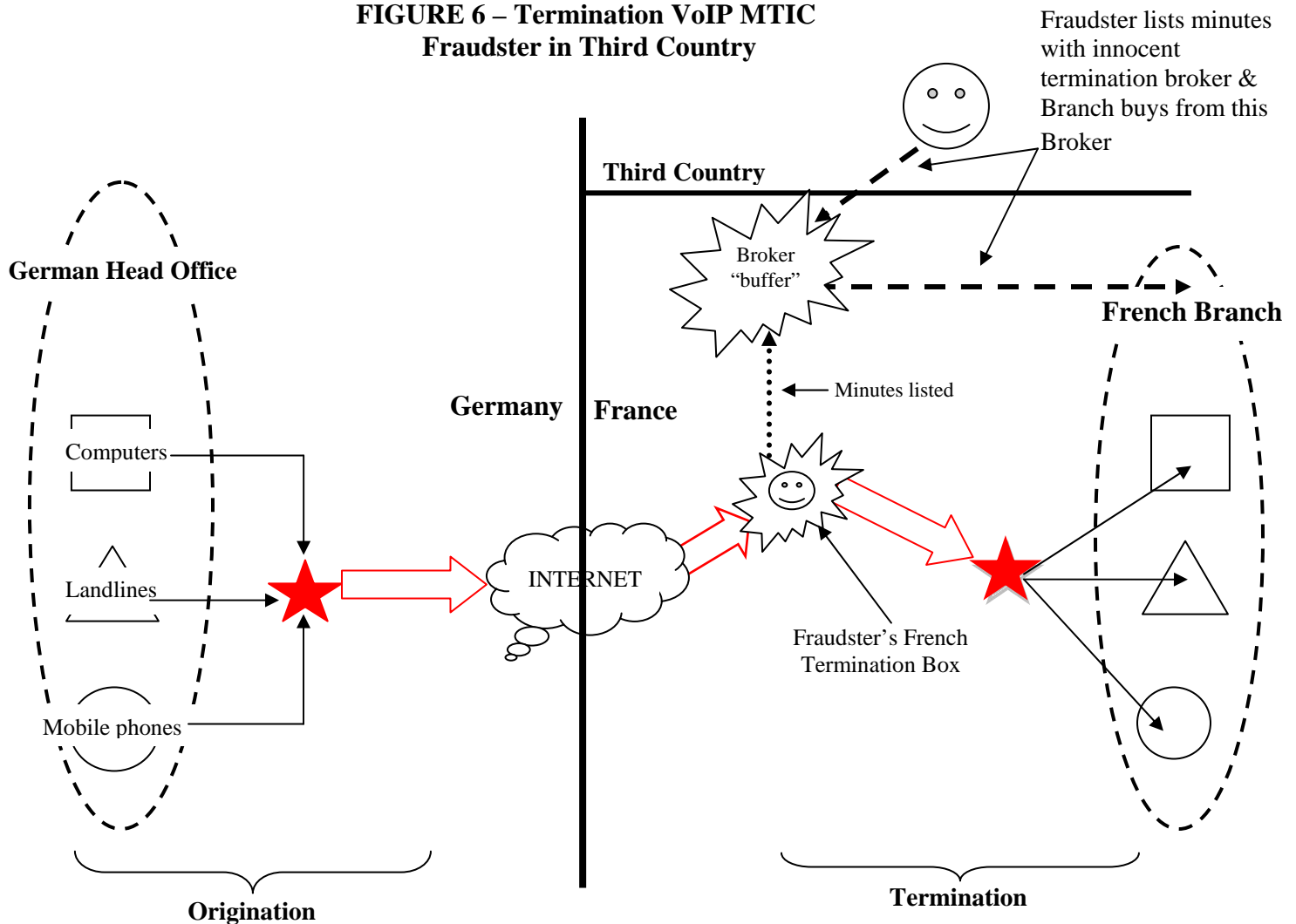
The goal is to run the unit remotely after securing a long-term contract with the local branch of a company that needs a significant number of local minutes – a VoIP company like Skype or Nimbuzz would be ideal. The minutes will be sold to the domestic branch of the company. VAT will be charged. The fraudster will not remit the funds.

**FIGURE 5 – Termination VoIP MTIC
Fraudster in Fraud Country**



If the fraudster thought that local authorities would uncover his operation, he would leave the jurisdiction once customer relationships were established and the termination box was in place. Future contracts with the French branch would be processed through an unsuspecting broker who would become a buffer. The awkwardness in this pattern is that in order to collect VAT the fraudster needs to be registered in that same country where the termination box is located. This arrangement can make it easier for the tax authorities to find the fraudster.

**FIGURE 6 – Termination VoIP MTIC
 Fraudster in Third Country**



Broker-to-retailer-to-public MTIC. This permutation assumes that a traditional retailer of a communication product – one that comes equipped with internet access – adds to the product customized termination services for an initial fee followed by a subscription service. For example, a vendor at a cell phone kiosk that bundles WiMAX by Airspan⁶⁴ with a cell phone could additionally supply termination services in any country in the world. WiMAX gets you into the internet, but it will not get you into a distant telephone exchange without a termination service in that place. What differentiates this pattern from the preceding scenarios is the consumer.

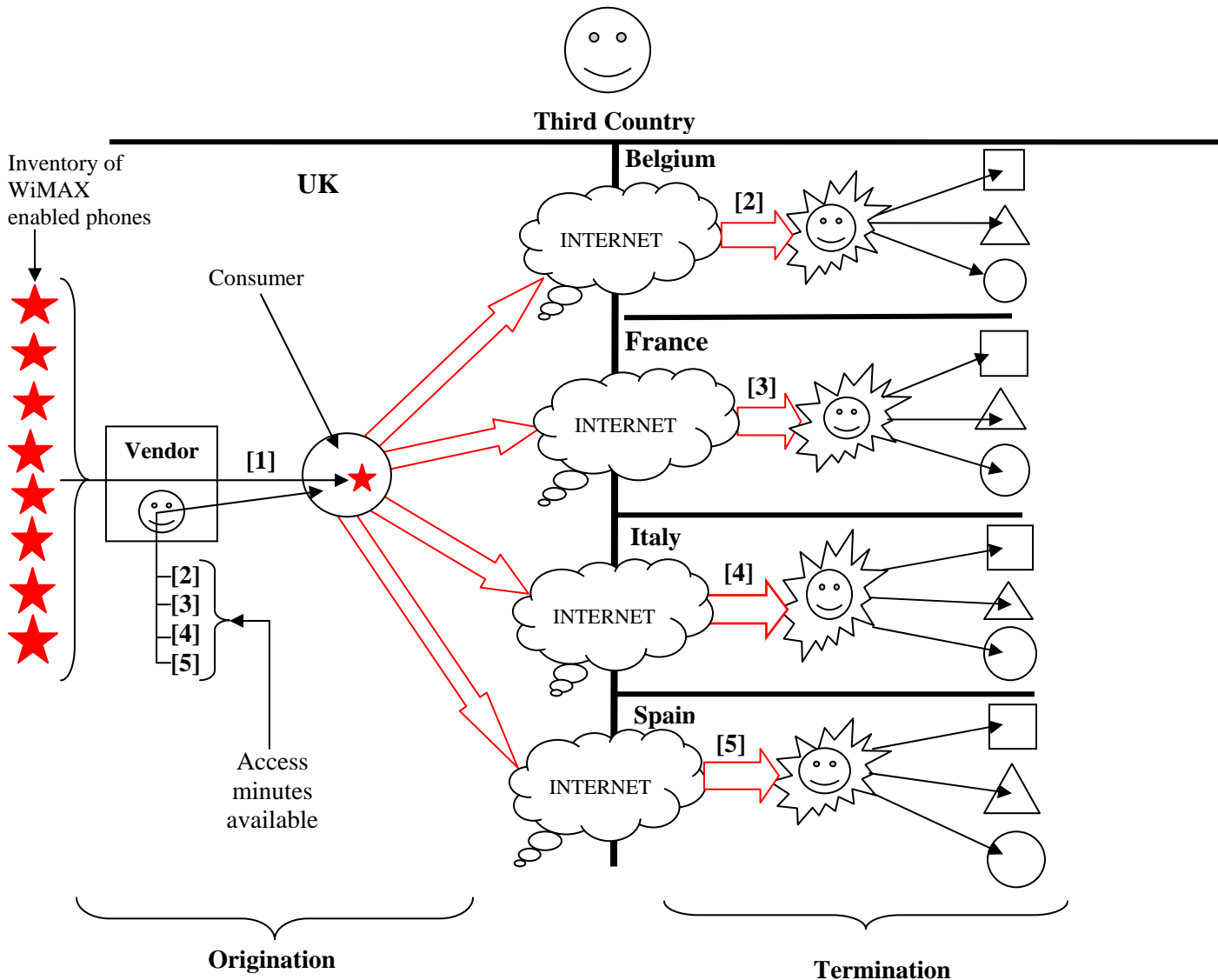
In figure 7 below, assume a mobile phone vendor operating out of a kiosk in the UK sells phones to consumers that are enabled with WiMAX from Airspan [1]. These phones allow the customer to access broadband internet through a 2.5 GHZ Band almost anywhere in the world (without incurring roaming charges). Assume also that this vendor has established a relationship

⁶⁴ *Supra* at note 27 and accompanying text.

with termination companies in Belgium [2], France [3], Italy [4], and Spain [5], and will sell (and install) access minutes through each of these termination companies for an additional fee.

Because the access minutes are an intra-community supply of services the vendor acquires them subject to a reverse charge. If the vendor re-sells and installs these minutes domestic VAT is charged. This is the classic MTIC alignment.

FIGURE 7 – Broker-to-Retailer-to-Consumer VoIP MTIC



Once a relationship is established between the UK consumer and the foreign provider of termination services, renewals can occur on-line. The continuation contract is an intra-community business-to-consumer (B2C) transaction, and the applicable VAT shifts from the UK to the jurisdiction where the termination box is located (Belgium, France, Italy or Spain in this example).

The place of supply of services to a non-taxable person shall be the place where the supplier has established his business.⁶⁵

It is not hard to imagine that this entire chain (from the vendor through to each of the termination companies) could be part of the same fraud network, all elements controlled by a master fraudster located in a third country. Any segment of this chain could go missing without disrupting any of the other elements. Enforcement would be extremely difficult once the consumer begins renewing directly with foreign termination companies over the net. If the termination company does not register for VAT in the foreign jurisdiction there is almost no way for tax authorities to become aware of the fraud.

VoIP MTIC OUTSIDE THE EU

MTIC is a European term that describes a type of VAT fraud that depends on the zero-rating of a cross-border supply (of goods or services) which is re-sold by a trader who will go missing after he charges VAT on the onward sale. However, zero-rating of supplies is not limited to intra-community supplies, and once we began considering MTIC in services (CO2 MTIC, and now VoIP MTIC) we need to recognize that this fraud is no longer confinable to the EU.

In other words, there are just as many companies, government or international agencies, and individuals outside the EU that want to switch from traditional telephone communications (PSTM/TDM) to internet based VoIP as there are within the EU. The demand for VoIP is global, and unfortunately the structural flaw in the EU VAT that allows VoIP MTIC can be replicated in every VAT/GST reviewed by this author, including the Japanese Consumption Tax.⁶⁶ The statutory alignment is the same – but instead of an intra-community supply requiring a reverse charge, it is the international cross-border supply that mandates it. A subsequent domestic sale where VAT is collected is all that is needed to complete the fraud.

There are two ways VAT/GST jurisdictions respond to the importation of services – exemption and reverse charge. In either case the effect is to allow the importation of VoIP termination services without VAT by enterprises that can resell the service with VAT/GST and then disappear. Iceland⁶⁷ and Jamaica⁶⁸ take a reverse charge approach. They essentially echo the EU, requiring taxable persons that import services from a supplier who is not registered to self-assess the VAT.

⁶⁵ VAT DIRECTIVE, Art. 45.

⁶⁶ The Japanese Consumption Tax is not a traditional credit-invoice VAT. It is an annual tax determined by subtraction, imposed on net value added of entities subject to the Japanese income tax.

⁶⁷ VALUE ADDED TAX ACT, No. 50 at Art. 35 (1998) (Iceland) (indicating that the purchase of a service from “abroad” that will be used “in part or in full” in Iceland is a taxable service, and must be included on a special form by the purchaser on the “fifth day of the second month from the close of the general settlement period when the transaction took place.”) & Art. 12(1)(10(h) (listing telecommunications services among the services controlled by the provisions of Art. 35).

⁶⁸ THE GENERAL CONSUMPTION TAX ACT, 1991 at § 3(1)(b) (Jamaica) (imposing the VAT on the importation of services into Jamaica); §3(2)(b) (requiring the importer of services to remit the tax - not the provider of the service); §19 (deeming a supply of services taxable in Jamaica when the supplier is not a resident of Jamaica, but the service is used in Jamaica).

Canada⁶⁹ and Botswana⁷⁰ take an exemption approach. These jurisdictions reason that if imported taxable services are used in making onward taxable supplies, then the importer should not be required to pay VAT/GST, because the full amount of tax will be collected on the subsequent supply. In these jurisdictions a reverse charge will only be imposed when VoIP services are imported by exempt entities (government agencies, non-registered foreign entities). The same result is reached under the Japanese Consumption Tax (CT), although through a very different mechanism.⁷¹

This should be a concern for the OECD as it tries to draft, "... the main rules for the taxation of internationally traded services and intangibles, which ensures that they are not subject to VAT/GST in more than one jurisdiction ..."⁷² Unfortunately, the OECD does not distinguish between commodity services – services that can be sold cross-border and then re-sold domestically without significant modification to the nature of the services – and integrated services – services that are by nature transformative, or become an integral part of onward domestic supplies. Emission allowances under the various "cap and trade" regimes fit under the first category, as do VoIP termination services.

⁶⁹ EXCISE TAX ACT, R.S.C., ch. E-15, § 154(1) (Can.)

⁷⁰ THE VALUE ADDED TAX ACT, 2001 at Pt.1, Art 2 (Botswana); and the Imported Services Ruling which states:

QUESTION

Are imported services subject to VAT?

ANSWER

Import of services by a VAT registered person for making taxable supplies is not regarded as a supply, as such there is no VAT. However if services are imported by a VAT registered person for an exempt supply then VAT is payable at the standard rate of 10%.

Import of services by a non registered person is subject to VAT at 10% standard rate.

⁷¹ The Japanese Consumption Tax is levied only on transfers of assets or the provision of services in Japan [Art. 4-1 of the CT]. A Cabinet Order determines the place where services are provided Art. 4-3-2 of the CT]. There are seven categories of services listed in the Cabinet Order [Art. 6-2 of the Order]. Either the fifth or the seventh category would seem to apply to architectural services. The fifth concerns the "provision of information or designs." The seventh functions as a catchall provision for "services other than those mentioned in the previous items." In both instances the place of taxation is the same. It is "the location of the office concerned in the provision of information or designs" [Art. 6-2-5 of the Order] in the fifth category, or it is "the location of the office of the person providing the service" [Art. 6-2-7 of the Order] in the catchall. Thus, no Japanese CT is due on the importation, but under the operation of the CT the full amount of the value added from imported service is collected when a subsequent sale occurs.

JAPAN'S REVISED CONSUMPTION TAX LAW (SHOUHIZEIHO), LAW NO. 108, 1988, AND APPENDIXES by approving the changes contained in LAW NO. 49, 2000; CABINET ORDER (SHOUHIZEIHO SEKOUREI) NO. 360, 1988 (most recent amendment, ORDER NO. 147, 2000 *available at*: <http://law.e-gov.go.jp/cgi-bin/idxsearch.cgi>. (in Japanese). For an English translation of the Consumption Tax law based on Law No. 108, 1988 by approving changes contained in Law No. 49, 2000 see "Consumption Tax Law," tr. Vickie L. Beyer, 2000 WTD 247-20 (December 22, 2000). For a translation of the appendixes to Japan's revised consumption tax law, Law No. 108 see "Translation of Exemptions to Japan's Revised Consumption Tax Law," tr. Vickie L. Beyer, 2000 WTD 247-21 (December 22, 2000). For a translation of the final regulations, Cabinet Order No. 360, 1988 (most recent amendment, Order No. 147, 2000) see "An Order for the Enforcement of the Consumption Tax Law," tr. Vickie L. Beyer, 2001 WTD 36-24 (February 20, 2001).

⁷² OECD, COMMITTEE ON FISCAL AFFAIRS, WORKING PARTY NO. 9 ON CONSUMPTION TAXES, APPLYING VAT/GST TO CROSS-BORDER TRADE IN SERVICES AND INTANGIBLES – EMERGING CONCEPTS FOR DEFINING PLACE OF TAXATION – Invitation for Comments (January 2008) at ¶ 5.

More troubling than the absence of this distinction is the direction that the current OECD assessment is taking. In the “Outcome of the First Consultation Document” the following points should be noted:

- “All the comments received ... agreed on the ‘destination principle’ adopted by the CFA (taxation should occur in the jurisdiction of consumption) and on the proxy adopted as a main rule for cross-border Business-to-Business transactions (i.e., the place where the customer is established).”
- “[T]he reverse charge mechanism is recommended as an appropriate tax collection mechanism for cross border transactions, [and] it should be made clear that it is not recommended for domestic transactions ...” and again in the same document;
- “[S]ome suggested clarifying that the reverse charge mechanism is recommended for cross-border supplies *only* and not for domestic supplies.”⁷³

These recommendations not only establish the MTIC alignment that fraudsters look for (a) a reverse charge for cross-border supplies followed by (b) a domestic taxable supply, they also take away the solution that the EU is applying in cell phones, computer chips, perfumes, precious metals and CO2 permits – the domestic reverse charge.

COM(2009) 511 recommends a targeted domestic reverse charge to counter MTIC fraud. The OECD in one statement suggests that a reverse charge is simply “not recommended for domestic transactions,” but some would go even further and set down a rule that the reverse charge is “for cross-border supplies *only*.”

This is a troubling development. Even though a domestic reverse charge is not workable in the EU unless all Member States apply it;⁷⁴ this does not mean that a stand-alone VAT/GST jurisdiction like Canada, Botswana, Jamaica, Iceland or Japan could not apply it very effectively in a surgical attack on missing trader fraud.

Of course, the selective domestic reverse charge is the slippery slope that leads to a retail sales tax as more and more classes of goods and services are added to the list of MTIC susceptible supplies. Just how slippery that slope is can be seen if we consider Dr. Michael Cheetham’s list of the supplies most susceptible to missing trader fraud.⁷⁵ Among the 41 items listed the first 12 are ranked in order of highest threat to the VAT; the remainder is set out in alphabetical order. The point being, if we were to apply a domestic reverse charge in all of these areas, the fractionated payment aspect of the VAT would be severely compromised.

SUPPLIES HIGHLY SUSCEPTABLE TO MISSING TRADER SCHEMES

Rank	Fraud Item	Rank	Fraud Item
1	Carbon Credits	Unranked	Designer Clothing

⁷³ OECD, COMMITTEE ON FISCAL AFFAIRS, WORKING PARTY NO. 9 ON CONSUMPTION TAXES, APPLYING VAT/GST TO CROSS-BORDER TRADE IN SERVICES AND INTANGIBLES – Outcome of the First Consultation Document (June 2008) at ¶¶ 5, 6 & 8 (emphasis added).

⁷⁴ Richard T. Ainsworth, *CO2 MTIC Fraud – Technologically Exploiting the EU VAT (Again)*, 57 TAX NOTES INT’L 357, 372 & Figure 3 (Jan. 25, 2009)

⁷⁵ Michael Cheetham, personal e-mail communication (February 3, 2010) (on file with author).

2	Gas	Unranked	Digital Still cameras
3	Electricity	Unranked	Drinks
4	Mobile phones	Unranked	Fabrics
5	LCD TV's	Unranked	Fashion Shoes
6	VoIP	Unranked	Games Console accessories
7	Hard Disks	Unranked	Games Consoles
8	Mobile Airtime	Unranked	GPS Navigation Systems
9	Cigarettes & Tobacco	Unranked	Hi Fi Systems
10	Video camcorder	Unranked	Ink Cartridges
11	CPU's	Unranked	Laptops
12	DVD/CD Rewriters	Unranked	Perfume
Unranked	Air Conditioners	Unranked	Platinum
Unranked	Batteries - Mobile, Li	Unranked	Recordable Media
Unranked	Blu-Ray players	Unranked	Satellite systems
Unranked	Car Hifi systems	Unranked	Semi Precious Metals
Unranked	Car Parts & Alloys	Unranked	SLR Cameras
Unranked	Children's' Clothing	Unranked	Sportswear & Trainers
Unranked	Computer & Console Games	Unranked	USB Memory Sticks
Unranked	D& Flash RAM, SRAM Memory	Unranked	USB Modems & Routers
		Unranked	Walkmans/MP3/MP4 Players

There is a better solution, one based in tested technology. In the EU implementation of this solution depends on Member State cooperation, and Commission leadership. Globally it will require international cooperating and substantive direction from the OECD.

THE TECHNOLOGY-BASED ADMINISTRATIVE SOLUTION

Although there are a large number of supplies that are being used by fraudsters as vehicles for MTIC fraud, but MTIC is not a product-specific fraud; it is a statute-specific fraud. MTIC relies on a zero-rated supply followed by an obligation to collect VAT on an onward sale.

Zero-rating an intermediate supply temporarily breaks the chain of fractionated payments. It occurs whenever supplies cross a border in a destination VAT. Fractionated payments are the hallmark attribute of the VAT, and MTIC takes advantage of this disruption. A solution to MTIC should heal the break – not break the chain once again. Thus, a domestic reverse charge does not solve MTIC. Applied on a single supply it prevents the spread of MITC in this supply, but it is not a scalable solution. It cannot be applied broadly - unless it is acceptable for the VAT to devolve into a retail sales tax.

Stripped to essentials MTIC is all about *assurance*. Where is the *assurance* that whenever an enterprise purchases supplies for resale with an obligation to perform a reverse charge that it will make and report this charge, and then remit the VAT on an onward sale? The important point is not *who* should remit the VAT; the important question is how can we be *assured* that whoever is charged with doing so actually does it?

Certified tax software and a change in the place of supply (and reporting requirements) can solve MTIC. This solution can be applied surgically on a selected supply, or it can be applied broadly for all supplies. Certified software is currently being used in the US retail sales tax by 23 states⁷⁶ under the Streamlined Sales and Use Tax Agreement (SSUTA).⁷⁷ The same software mechanisms could close the broken link in the fractionated payment system that MTIC abuses.

Certified tax software solution. Each EU Member State (as well as all non-EU jurisdictions following the preliminary recommendations of the OECD on *Applying VAT/GST to Cross-Border Trade in Services and Intangibles*) can suffer revenue losses from VoIP MTIC. This paper proposes that a testing regime for the certification of enterprise-level transaction tax software be adopted to prevent VoIP MTIC.⁷⁸ The software to be certified would be comprehensive. It would: (a) determine the correct tax for each transaction and calculate the VAT amount due, (b) post this amount on the appropriate invoice, (c) link each VAT input or output amount to the correct VAT return, and (d) complete the VAT return accurately.

Business use of certified software should be voluntary. In some instances however, notably when an enterprise is heavily engaged in transactions deemed inherently prone to MTIC fraud – like VoIP termination services, tradable emissions permits, cell phones, computer chips, perfume or precious metals – a jurisdiction might make adoption mandatory. Another instance

⁷⁶These twenty-three states are divided into two groups, the full members, and the associate members. A full member state is a state that is in compliance with the Streamlined Sales and Use Tax Agreement through its laws, rules, regulations, and policies. Those states are: Arkansas, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Nebraska, Nevada, New Jersey, North Carolina, North Dakota, Oklahoma, Rhode Island, South Dakota, Vermont, Washington, West Virginia, Wisconsin, and Wyoming. An associate member state is a State that has achieved substantial compliance with the terms of the Streamlined Sales and Use Tax Agreement taken as a whole, but not necessarily each provision, and there is an expectation that the state will achieve compliance soon. Those states are: Ohio, Tennessee, and Utah, see <http://www.streamlinedsalestax.org> (last visited Jan. 24, 2009).

⁷⁷ STREAMLINED SALES AND USE TAX AGREEMENT (adopted November 12, 2002, amended November 19, 2003 and further amended November 16, 2004) available at <http://www.streamlinedsalestax.org> (providing for fully digital compliance with sales and use taxes through certified intermediaries and certified software solutions).

⁷⁸The SSUTA certification process involves measuring software against three third party standards; (1) the AICPA's SAS 94 [AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS, PROFESSIONAL STANDARDS, Vol. 1 AU § 319 *The Effect of Information Technology on the Auditor's Consideration of Internal Control in a Financial Statement Audit, as amending SAS No. 55 Consideration of Internal Control in a Financial Statement Audit*]; and (2) the US-GAO Federal Information Systems Control Audit Manual [U.S. GOVERNMENT ACCOUNTING OFFICE, ACCOUNTING AND INFORMATION MANAGEMENT DIVISION, FEDERAL INFORMATION SYSTEMS CONTROL AUDIT MANUAL, (FISCAM) Vol. 1 (GAO-AIMD12.19.6) available at <http://www.gao.gov/special.pubs/ai12.19.6.pdf>]. In addition, software developers must comply with (3) ISO Number 17799 [INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, ISO 17799: INFORMATION TECHNOLOGY, SECURITY TECHNIQUES, CODE FOR INFORMATION SECURITY MANAGEMENT (ISO/IEC 17799:2005)]. A discussion of similar standards for certification and accreditation of software can be found in the recent O.E.C.D. materials [*Electronic Commerce: Facilitating Collection of Consumption Taxes on Business-to-Consumer Cross-Border E-Commerce Transactions*, O.E.C.D. (Feb. 11, 2005) at 9 & 17-18 available at <http://www.oecd.org>]. Indicating that, "... a global intermediary may be based in one country and would undertake intermediary activities in as many countries as suppliers are required to collect and remit consumption taxes on behalf of e-commerce suppliers. In cases where satisfactory levels of approval or financial security are evident, countries could be more relaxed ...". The OECD discusses a range of government "approvals" for tax accounting software. At one extreme is "accreditation," an approval process functions simply as a mechanism to "formally identify" software that meets certain criteria of acceptability. At the other extreme is "certification," an approval process that designates software as "an officially authorized mechanism to perform specified functions."].

where mandatory adoption might be appropriate is after a judicial proceeding. The government could seek (as a fraud remedy) that a court require a taxpayer to adopt certified software “going forward,” because of proven instances of fraud in the past.⁷⁹

Although fundamentally a voluntary regime, financial incentives should be used to encourage certified software adoption. In addition, further incentives should encourage businesses to contract with trusted third-party service providers (CSPs) who would use certified software to meet all tax compliance obligations, as is the case under the SSUTA.⁸⁰ Under this structure the CSP becomes the taxpayer’s agent for return preparation, submission, and remission of tax to the Treasury. Use of a CSP would function like an insurance policy against errors – it would indemnify the taxpayer.⁸¹

The government will want assurances that unauthorized changes could not be made to the software after certification is awarded. This is easily resolved. There are very cost effective and accurate security systems for tax software. The most notable has been developed by the German

⁷⁹ This was the approach taken by Judge Lise Gaboury of the Court of Quebec in the fraud case against the 28 restaurant chain Casa Grecque. In this instance the fraud involved installing an automated sales skimming program called a Sales Zapper in the point of sale system (the networked electronic cash register). In the Budget Speech of March 23, 2006 the Minister of Revenue had announced the adoption of an automated system [*module d’enregistrement des vents*] that would be voluntary until 2011. Judge Gaboury noted that the system was expected to be available by October 1, 2008 and required all of the Casa Grecque restaurants to adopt it at this time as a condition of remaining in business. Revenue Quebec, *Des restaurants de la chaîne Casa Grecque coupables de fraude fiscale* (in French only) available at:

http://www.revenu.gouv.qc.ca/eng/ministere/centre_information/communiqués/ev-fisc/2006/10juillet.asp

⁸⁰ SSUTA provides for audit immunity when certified technology is used to determine the tax liability. It provides in §203 for Certified Service Providers (CSP) “[a]n agent certified under the Agreement to perform all the seller’s sales and use tax functions, other than the seller’s obligation to remit tax on its own purchases;” in §202 for Certified Automated Systems (CAS) “[s]oftware certified under the Agreement to calculate the tax imposed by each jurisdiction on a transaction, determine the amount of the tax to remit to the appropriate state, and maintain a record of the transaction;” and §207 for Certified Proprietary System (CPS) a system owned by “[a] seller that has sales in at least five member states, has total annual sales of at least five hundred million dollars, has a proprietary system that calculates the amount of tax due each jurisdiction, and has entered into a performance agreement with the member states that establishes a tax performance standard for the seller.”

⁸¹ This is the approach under SSUTA’s enabling Acts (specifically the Uniform Sales and Use Tax Administration Act, at §9(a)):

A Certified Service Provider is the agent of a seller, with whom the Certified Service Provider has contracted, for the collection and remission of sales and use taxes. As the seller’s agent, the Certified Service Provider is liable for sales and use tax due each member state on all sales transactions it processes for the seller except as set out in this section. A seller that contracts with a Certified Service Provider is not liable to the state for sales or use tax due on transactions processed by the Certified Service Provider unless the seller misrepresented the type of items it sells or committed fraud. In the absence of probable cause to believe that the seller has committed fraud or made a material misrepresentation, the seller is not subject to audit on the transactions processed by the Certified Service Provider. A seller is subject to audit for transactions not processed by the Certified Service Provider. The member states acting jointly may perform a system check of the seller and review the seller’s procedures to determine if the Certified Service Provider’s system is functioning properly and the extent to which the seller’s transactions are being processed by the Certified Service Provider.

government to assure tamper-proof electronic cash registers and point of sale systems with smart cards.⁸²

Under a certified tax software solution, enterprises that contracted with CSPs would be able to (a) assure the tax authority that the VAT was properly assessed, collected and remitted, (b) satisfy any due diligence requirement under joint and several liability provisions,⁸³ and (c) immunize itself from cash flow or other losses arising from an audit or investigation based on suspected MTIC fraud.⁸⁴

One statutory change is necessary – a conditional change in reporting obligations. The specific rule change differs depending upon whether the transaction involved is an intra-community supply, or a supply involving a Third Country. The intra-community applications have been considered in the context of CO2 MTIC.⁸⁵ What needs to be considered here are the Third Country rules.

Two situations need to be distinguished – the direct purchase/importation for commercial use of VoIP termination services from a foreign provider (Figure 2) and the domestic purchase of VoIP termination services from a broker dealing in foreign termination minutes (Figure 3 or 4). In the first case VoIP is an integrated service (VoIP is an integral part of onward domestic

⁸² Mathias Neuhaus, Jörg Wolff & Norbert Zisky, *Proposal for an IT Security Standard for Preventing Tax Fraud in Cash Registers*, INFORMATION SECURITY SOLUTIONS EUROPE, Sept. 2009 (forthcoming, copy on file with author) (describing the German Ministry of Finance engagement of the German National Metrology Institute (Physikalisch-Technische Bundesanstalt to develop an operational smart card solution for cash register/ point of sale system fraud programs, and the "INSIKA" (INtegrierte SIcherheitslösung für messwertverarbeitende KAssensysteme) project that made this solution a reality in 2008 with an estimated cost of security at €30-50 per installation).

⁸³ VAT DIRECTIVE Art. 205.

⁸⁴ *Commissioners of Custom & Excise v. Federation of Technological Industries* C-384/04 (May 11, 2006); [2006] ECR I-4191 (concerning a trade association and 53 members all traders in cell phones and computer chips in fact patterns based in "acquisition fraud" and "carousel fraud" with questions concerning the applicability of joint and several liability provisions in the UK VAT Act).

⁸⁵ Under current rules the place of supply for VoIP services when supplied between Member States is where the customer is established [Article 44]. The reporting obligations are on the supplier [Article 193] unless the supplier and customer are located in different Member States, in which case it is the customer's obligation [Article 196] to file and pay. This is the intra-community reverse charge provision.

If both buyer and seller are using certified systems there is no need to change the current rules. The same is true when the seller is not using a certified system, but the buyer is using a certified system. A reverse charge would still be applied (as under the current system) and both jurisdictions would be assured that the correct tax would be remitted to the proper jurisdiction.

However, if the buyer is not using a certified system, but the seller is using one, then the obligation to collect and remit the VAT would need to be shifted back to the supplier [Article 193]. This would mean that a seller in the UK would collect French VAT on a sale to a French established enterprise. This is not an ideal business outcome – a UK business might not want to be obligated to register in France, and then collect and remit French VAT – but both jurisdictions would again be assured that the correct tax is collected and remitted.

If neither buyer nor seller is using a certified system the transaction would be inherently suspect. An uncertified vendor selling to an uncertified buyer should never be allowed to zero-rate an intra-community transaction. VAT must be collected, and it should again be the VAT applicable in the buyer's jurisdiction. In markets where fraud is a high probability the use of certified systems should be mandated. If this is not possible, then the deductibility of the VAT paid by the buyer should be conditioned on verification that the VAT was remitted by the seller. See: Richard T. Ainsworth, *MTIC Fraud Infects Tradable CO2 Permits*, 55 TAX NOTES INT'L. 733, 742-46 (Aug. 31, 2009); Richard T. Ainsworth, *CO2 MTIC Fraud – Technologically Exploiting the EU VAT (Again)*, 57 TAX NOTES INT'L. 357 (Jan. 25, 2010).

supplies different from the VoIP termination service itself); in the second case VoIP is a commodity service (VoIP termination services are bought to be resold “as is”).⁸⁶

The first case is not susceptible to MTIC. As noted by Canada, Botswana and Japan, if a business imports a service as an input that is used by a commercial enterprise to produce taxable output, a reverse charge is not required. It is sufficient that the subsequent supply be taxed in full. If a reverse charge in this instance, as is the case in Iceland Jamaica and the EU the outcome is the same.

The second case – where VoIP termination services are bought and sold as a commodity – is highly susceptible to missing trader fraud. All tax systems allow VoIP service to be imported tax free (the importer is either required to self-assess or is provided an exemption), as a result, the link that needs to be certified is the link between the domestic importer/re-seller of VoIP termination services and the next domestic buyer. A certified regime would provide assurance that the VoIP importer/re-seller would not re-sell with VAT/GST and then “go missing.” There are four permutations:

- (1) *Buyer & Seller certified.* If both buyer and importer/re-seller have certified systems assurances would be clear.
- (2) *Buyer not certified & Seller certified.* If the importer/re-seller was certified and the buyer was not the seller’s system would automatically invoice, collect and remit the GST/VAT.
- (3) *Buyer certified & Seller not certified.* The taxability rules would need to change when an importer/re-seller was not certified. If only a buyer is certified the statute would require a reverse charge. This is a reverse charge only at this one link in the chain. The critical point that should be clearly set out in statute or rules is that GST/VAT should never be paid across to a domestic seller that is not certified, and if it is then the VAT is not deductible.
- (4) *Buyer not certified & Importer/ re-seller not certified.* The final case is the most problematical. A rule that denied the deductibility of VAT paid to a non-certified seller would prevent the most of the missing trader fraud. However, this rule would not assure the tax authority that it received the full amount of the tax. VoIP could be sold and re-sold among non-certified businesses. As a result, there are two further permutations:
 - a. *Buyer’s commercial input.* If an uncertified buyer purchases VoIP termination services from an uncertified seller, and uses these termination services in a commercial process, then (because no GST/VAT paid on the acquisition of these services was deductible) the full amount of tax will be collected later.
 - b. *Buyer is an exempt entity.* In this case a reverse charge is needed. The best way to accomplish this is to mandate that all exempt entities adopt certified systems. If not, and if fraudsters can get exempt entities to pay over the

⁸⁶ *Supra* text accompanying note 72.

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MTIC & VOIP
February 8, 2010

GST/VAT, the fraudsters will target the government itself as its missing trader accomplice.