



## **Resolution of Cross-border E-business Disputes by Arbitration Tribunals on the Basis of Transnational Substantive Rules of Law and E-business Usages: The Emergence of the *Lex Informatica*.**

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### **1. Introduction**

The purpose of this paper is to examine the need for and feasibility of the identification of a set of dynamic transnational substantive rules of e-business law, created by and for the participants in cross-border e-business, and applied along with international e-commerce usages by online arbitrators for the resolution of cross-border e-business disputes.<sup>2</sup> Parties are free to select a national law to determine their rights and obligations under the e-commerce contract and/or to be applicable to any dispute that may arise under this contract. In the absence of choice by the parties, the arbitrators are free to apply a national law either indirectly pursuant to a conflict of laws method, or directly if they deem that law to be appropriate for the particular dispute. The selection of a national law is theoretically possible. However, a strong argument can be put forward regarding the need for development of a set of flexible transnational legal standards applicable by arbitrators to cross-border e-business disputes. This approach reflects the dynamic, truly international and delocalised nature of cross-border e-business. The body of such transnational substantive rules of law and usages, and the method of their application, are identified in this paper as the

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<sup>2</sup> All websites referred to in this paper were active on 1 March 2006. All arbitration instruments referred to in this paper are available in English at <http://www.kluwarbitration.com>.

*lex informatica*.<sup>3</sup> Firstly, we define the *lex informatica* by drawing from the well established, albeit sometimes ambiguous, practice of the application of transnational rules of law and international trade usages to offline international economic transactions, i.e. the *lex mercatoria*; we demonstrate the need for the *lex informatica*, discuss its potential contribution to the proliferation of online arbitration and the co-regulation of cross-border e-business, and identify potential obstacles to its development (1). We then transpose the method of transnational substantive rules to online arbitration of cross-border e-business disputes by identifying, to the extent currently possible, the sources, content and scope of such transnational rules of e-business law; the method of their application; and, the enforceability of awards based on the *lex informatica*. We conclude by identifying issues calling for further research (2).

## 2. Lex Informatica

One of the issues raised by the growth of international e-business is whether it necessitates the formulation of transnational substantive rules of law, which along with emerging e-business usages determine the contractual rights and obligations of parties and which can be applied by arbitral tribunals for the resolution of disputes.<sup>4</sup>

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<sup>3</sup> *Infra* 1(I). This use of the term should be distinguished from the use that refers to a set of rules for information flows imposed by technology and communication networks. Such technological rules constitute a useful extra-legal instrument of policy-making that may achieve objectives that otherwise challenge conventional laws and governmental attempts for regulation across jurisdictions, see e.g. Reidenberg, J.R., "Lex Informatica: The Formulation of Information Policy Rules through Technology", 76(3) Tex LR 553 (1998). For authors using the term "*lex informatica*" in the sense used in the present paper see following note.

<sup>4</sup> Several publications touch upon or examine aspects of the need for transnational substantive legal standards applicable to internet interactions, see e.g. Hardy, T., "The Proper Legal Regime for "Cyberspace"", 55 U Pit L R 993 (1993-1994), drawing parallels between *lex mercatoria* and the quest for the substantive law of internet activities and focusing on internet custom and netiquette; Johnson, D.R., "The New Case Law of Cyberspace", May 17 1994, <http://www.cli.org/DRJ/case.html>, submitting that the new case law of cyberspace could derive from custom and principles based on consensus as depicted, at the time, in discussion group decisions; Johnson, D.R., Post, D.G., "Law and Borders - The Rise of Law in Cyberspace", 48 Stanford L R 1367 (1996), [http://www.cli.org/X0025\\_LBFIN.html](http://www.cli.org/X0025_LBFIN.html), same authors "And How Shall the Net be Governed? A Meditation on the Relative Virtues of Decentralised, Emergent Law", 1996, <http://www.cli.org/emdraft.html>, and same authors "The New 'Civic Virtue' of the Internet: A complex Systems Model for the Governance of Cyberspace", in Firestone, C. (ed) "The Emerging Internet", 1998 Annual Review of the Institute for Information Studies, <http://www.temple.edu/lawschool/dpost/Newcivicvirtue.html>, advocating the merits of various aspects of decentralised group-specific law making in cyberspace; Balah, R., "Self-Regulation in Global Electronic Markets Through Reinvigorated Trade Usages", 31 Idaho LR 863 (1995), explaining why trade usages could form the legal foundation of regulation for electronic markets, at 866; Mefford, A., "Lex Informatica: Foundations of Law on the Internet", 5 (1) Indiana J GLS 211 (1997), drawing parallels between the *lex mercatoria* and the *lex informatica* and performing an initial

There exists an established tradition of application of such transnational rules of law by international arbitrators to the substance of international economic disputes. The body consisting of such transnational substantive rules of law and trade usages and the method of their application to international economic transactions are known as the *lex mercatoria*.<sup>5</sup>

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examination of its applicability to contractual relations and tort; Mefford uses the term *lex informatica* to describe an independent system of law along the lines of the *lex mercatoria*, and attributes the introduction of the term to Van Boom, V.H., Van Erp, J.H.M., “Electronic Highways: On the Road to Liability”, in Bekkers, V., Koops, B., Sjaak, N., (eds), *Emerging Electronic Highways: New Challenges for Politics and Law*, Kluwer Law Int’l, The Hague/London/Boston, 1996, 153, who use the term in order to denote a possible system of conflicts of law for the internet; Gautrais, V., Lefebvre G., Benyeklef, K., “Droit du Commerce International et Normes Applicables: L’ Emergence de la Lex Electronica”, 5 Rev. Dr. Af. Int./ Int’l Buis. L.J. 547 (1997); Caprioli, E., Sorieul, R., “Le Commerce International Electronique: Vers l’ Emergence des Règles Juridiques”, 124 Clunet 323 (1997); Polanski, P., Johnston, R., “International Custom as a Source of Law in Global Electronic Commerce”, Proceedings of the 35<sup>th</sup> Hawaii International Conference on System Sciences, 2002, exploring the possibility of e-custom as a potential solution to legal disputes in contractual global e-commerce; Herrmann, G., “Some Legal e-Flections on Online Arbitration (Cybitration)”, in Briner, R., Fortier, L.Y., Berger, K.P., Bredow, J., (eds), *Law of International Business and Dispute Settlement in the 21st Century, Liber Amicorum Karl-Heinz Böckstiegel*, Cologne, Heymanns, 2001, 267-276, whose references to Schmitthoff’s idea for a Global Commercial Code and to the CISG, p.270, as well as to the need for a “...*global substantive law*...” , p 271, seem to be also supportive of the notion of transnational e-business law. For the need to develop transnational rules for European e-commerce and more extensive analysis of the feasibility of transnational rules of e-commerce law at the European level see Vahrenwald, A., “Out-of-Court Dispute Settlement Systems for e-Commerce, Report on Legal Issues, Part IV: Arbitration”, EU Joint Research Centre Publication, 2 April 2001, <http://econfidence.jrc.it>>documents, 164 *et seq* and 179 *et seq*, who also uses the term *lex electronica*. Other terms used in the literature include the *lex internetica* and the *cyberlex mercatoria*, see e.g. Davis, B.G., “The New New Thing: Uniform Domain-Name Dispute-Resolution Policy of the Internet Corporation for Assigned Names and Numbers”, 17(3) J Int Arb 115 (2000).

<sup>5</sup> On the historical development of the *lex mercatoria* the first use of the term “transnational law” by Judge Jessup in his seminal homonymous work of 1956 and the evolution of the modern doctrinal debate see Maniruzzaman, A.F.M., “The Lex Mercatoria And International Contracts: A Challenge for International Commercial Arbitration?”, 14 A U Int’l L R 657 (1999), 660 *et seq*; De Ly, F., *International Business Law and Lex Mercatoria*, North – Holland, Amsterdam, 1992, including an account of earlier theories, 207 *et seq*; De Ly, F., “Lex Mercatoria (New Law Merchant): Globalisation and International Self-regulation”, in Appelbaum, R.P., Felstiner, L.F., Gessner V., (eds), *Rules and Networks; the Legal Culture of Global Business Transactions*, Oxford/Portland, Hart, 2001, 159-188, at 159-167; Teubner, G., “Global Bukowina: Legal Pluralism in the World Society”, in Teubner, G., (ed), *Global Law Without a State*, Dartmouth, London, 1997, 3-28, at 8-11. For the methodical, theoretical and dogmatic foundations of *lex mercatoria* see Berger, K.P., *The Creeping Codification of the Lex Mercatoria*, The Hague/London, Kluwer Law Int’l, 1999, 9 *et seq* and 32 *et seq*. See also generally e.g. Goldman, B., “La Lex Mercatoria dans les Contrats et l’ Arbitrage Internationaux: Réalités et Perspectives”, JDI 475 (1979); Goldman, B., “The Applicable Law: General Principles of Law”, in Lew, J.D.M., (ed), *Contemporary Problems in International Arbitration*, Dordrecht/Boston/Lancaster, M. Nijhoff, 1987; Baron, G., “Do the UNIDROIT Principles of International Commercial Contracts Form a New Lex Mercatoria?”, 15(2) Arb Int’l 115 (1999); Berger, K.P., “The New Law Merchant and the Global Market Place”, in Briner *et al* (eds), *supra* note 4; Berger, K.P., (ed), *The Practice of Transnational Law*, The Hague/London/Boston, Kluwer Law Int’l, 2001; Carbonneau, T., (ed), *Lex Mercatoria and Arbitration. A Discussion of the New Law Merchant*, revised edition, Dobbs Ferry, N.Y.: Transnational Juris Publications, 1998; Fortier, L. Y., “The New, New Lex Mercatoria, or, Back to the Future” , 17 (2) Arb Int’l 121 (2001); Gaillard, E., (ed), *Transnational Rules in International Commercial Arbitration*, Institute of International Business Law and Practice, ICC Publishing, 1993; Gaillard, E. , “Thirty Years of Lex Mercatoria: Towards the Selective Application of Transnational Rules”, 10 ICSID Review-FILJ 208

## 2.1 Definition

In this paper the term “*lex informatica*” encapsulates an expansive concept that has a mixed substantive and methodological content. It covers all sector-specific variations and encompasses both the body of transnational substantive rules of e-business law and e-business usages, and the method of their application for the resolution of e-disputes by arbitration.

With regard to the substantive component<sup>6</sup>, *lex informatica* is conceived as a generic term encompassing any e-business rules other than those stemming from a specific jurisdiction,<sup>7</sup> i.e. transnational rules of e-business law and international e-business usages. In turn, transnational rules of e-business law are defined as any rules that do not originate exclusively from one jurisdiction, and encompass two separate sets of rules: firstly, rules of e-business law common to several legal systems determined on the basis of the *tronc commun* method<sup>8</sup>. Secondly, general principles of e-business law enshrined in the main legal systems and in international sources, such as international conventions, international arbitral case law, or other sources demonstrating a wide acceptance of the principle by the international business and

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(1995); Gaillard, E., “Transnational Law: A Legal System or a Method of Decision Making?” 17(1) Arb Int’l 59 (2001); Lando, O., “The Lex Mercatoria in International Commercial Arbitration”, 34 ICLQ 747 (1985); Lando, O., “The Law Applicable to the Merits of the Dispute”, 2(2) Arb Int’l 104 (1986); Lando, O., “The Law Applicable to the Merits of the Dispute” in Sarcevic, P., (ed) , Essays on International Commercial Arbitration, Graham & Trotman / Martinus Nijhoff, London, 1989, 129-159, at 143 *et seq*; Lew, J.D.M., Applicable Law in International Commercial Arbitration, Oceana, 1978; Lowenfeld, E., “Lex Mercatoria: An Arbitrator’s View”, 6 Arb Int’l 133 (1990); Mistelis, L.A., “Regulatory Aspects: Globalization, Harmonization, Legal Transplants and Law Reform” 34(3) The International Lawyer 1055 (Fall 2000); Mustill, M.J., “The New Lex Mercatoria: The First Twenty-five Years”, 4(2) Arb Int’l 86 (1988); Nottage, L., “The Vicissitudes of Transnational Commercial Arbitration and the Lex Mercatoria. A View from the Periphery”, 16(1) Arb Int’l 53 (2000); Paulsson, J., “La Lex Mercatoria Dans l’ Arbitrage C.C.I.”, 1 Rev Arb 55 (1990) ; Rivkin, D. W., “Enforceability of Arbitral Awards Based on Lex Mercatoria”, 9(1) Arb Int’l 67 (1993); Schmitthoff, C., “International Business Law: A New Law Merchant”, 2 Current Law and Social Problems 129 (1961); Schmitthoff, C., “The Law of International Trade, its Growth, Formulation and Operation”, in Schmitthoff, C., (ed) The Sources of the Law of International Trade, 1964, 3 *et seq*.

<sup>6</sup> The substantive component of *lex informatica* derives from the substantive component of *lex mercatoria*, for which see Gaillard, Thirty Years of Lex Mercatoria, *supra* note 5, 211; Gaillard, E., Savage, J., (eds), Fouchard, Gaillard, Goldman on International Commercial Arbitration, The Hague/London/Boston, Kluwer Law Int’l, 1999, 1447.

<sup>7</sup> For the sources of *lex informatica* see *infra* 2(I).

<sup>8</sup> On the *tronc commun* see Rubino-Sammartano, M., “Le Tronc Commun des Lois Nationales en Présence. Réflexions sur le Droit Applicable par l’ Arbitre International”, Rev Arb 133 (1987); Rubino-Sammartano, M., “The Channel Tunnel and the Tronc Commun Doctrine”, 10 J Int Arb 59 (1993); Rubino-Sammartano, M., International Arbitration, Deventer/Boston, Kluwer Law and Taxation Publishers, , 2001, 446 *et seq*.

legal communities.<sup>9</sup> In this regard attention should be paid to the possibility of relevance of general principles of public international law.<sup>10</sup> In cases where there are gaps, e.g. where the general principles of e-business and the comparative examination of several legal systems do not point with certainty to a given rule, the functional and dynamic methodology employed by online arbitrators<sup>11</sup> ensures that the issue at stake will find a solution.

With regard to the methodological component, the functional and dynamic three-step method employed by international arbitrators for the application of the *lex mercatoria* to international disputes<sup>12</sup> should generally be employed by online arbitrators to e-business disputes in order to determine on a case-by-case basis the applicable transnational rule of law or e-business usage. In doing so, they should look at the intentions of the parties and seek guidance from available international instruments reflecting consensus, relevant case law and comparative law resources. In determining the suitability of the rule online arbitrators should bear in mind the rapid pace of development of the state of the art in e-business.<sup>13</sup>

Thus, the following definition of *lex informatica* can be articulated:

*Lex informatica* is the body of transnational rules of law and trade usages applicable to cross-border e-business transactions,<sup>14</sup> created by and for the participants in cross-border e-business and applied by arbitrators to settle disputes<sup>15</sup> on the basis of the intention of the parties and functional comparative law analysis<sup>16</sup> taking into account

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<sup>9</sup> *Infra* 2(I).

<sup>10</sup> The application of public international law may be appropriate either as a source of inspiration for principles of international commercial law, see Gaillard and Savage, *supra* note 6, 1447, or as a means of determination of concepts and notions that are unknown to national law or that are better developed in international law, see Lew, *supra* note 5, 444 and 583. Public international law is increasingly relevant to all types of commercial transactions. It has been applied in several ICC or *ad hoc* international commercial arbitrations, see Lew, J.D.M., Mistelis, L.A., Kroll, S.M., *Comparative International Commercial Arbitration*, The Hague/London/New York, Kluwer Law Int'l, 2003, 18-73 with awards cited in notes 110 and 111. Finally, supranational law such as that stemming from NAFTA or the European Union may be applicable pursuant to an agreement of the parties or occasionally as mandatory law, see Lew *et al*, 18-76 and awards cited in note 113.

<sup>11</sup> See below and further *infra* 2(IV).

<sup>12</sup> See Gaillard, *Transnational Law*, *supra* note 5; Gaillard, *Thirty Years of Lex Mercatoria*, *supra* note 5; Gaillard and Savage, *supra* note 6, 1456 *et seq.* Lando, *Law Applicable to the Merits in Sarcevic* (ed), *supra* note 5, 143, refers to a "...judicial process, which is partly an application of legal rules and partly a selective and creative process..."; he describes that process at 147 *et seq.*

<sup>13</sup> See *infra* 2(IV).

<sup>14</sup> Based on Goldman, *The Applicable Law: General Principles of Law*, *supra* note 5, 113.

<sup>15</sup> Based on Lew *et al*, *supra* note 10, 18-47.

<sup>16</sup> Based on Gaillard, *Transnational Law*, *supra* note 5.

the current state of play in e-business. *Lex informatica* is defined by its sources.<sup>17</sup> It is the product of private decentralised law-making emerging mainly from the discourses of actors in cross-border e-business transactions and from information technology networks, and not from the political centres of nation-states and international institutions.<sup>18</sup> *Lex informatica* is an expansive concept<sup>19</sup> encompassing several specific variations depending on the e-business sector it derives from and to which it applies.<sup>20</sup>

## 2.2 Justification

Several reasons can be cited in support of the need of the international e-business community to develop and adopt the *lex informatica*. Some stem from general international business considerations, similar to those that led to the development of the *lex mercatoria*. Others stem from the particularities raised by the extensive use of information technologies in e-business. Further, strong arguments can be put forward in support of the legitimacy of *lex informatica*.

With regard to the necessity of the transnational rules approach in international trade in general<sup>21</sup> legal reasons are of particular importance. These include the need to avoid the application of conflict of laws rules,<sup>22</sup> particularly so when they do not produce satisfactory results, as will often be the case in cross-border e-business,<sup>23</sup> e.g. because the contract can not be localised properly, or it is localised in multiple jurisdictions, or when localisation would be arbitrary. In such cases the inadequacy of conflict of laws can be avoided by reference to transnational rules.<sup>24</sup> Further, there exists a need to avoid national substantive law, which drafted primarily for application by courts in disputes concerning national transactions may not be suitable

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<sup>17</sup> *Ibid*, section I(a).

<sup>18</sup> Based on Teubner, *supra* note 5, 7. Although national instruments are among the sources of *lex informatica*, rules stemming from national sources are elevated to the status of transnational rules of e-business law only if they are widely adopted by the international e-business and legal communities.

<sup>19</sup> Based on Maniruzzaman, *supra* note 5, 669-670.

<sup>20</sup> Therefore in the highly likely event of emergence of specific sets of transnational rules and usages in individual sectors of e-business such as e.g. e-commerce, consumer e-commerce, domain names, e-banking and finance etc, the *lex informatica* encompasses all sector-specific sets of rules and usages.

<sup>21</sup> With regard to parallels between the need for the development of the *lex informatica* and the *lex mercatoria* see e.g. Hardy *supra* note 4, and Mefford *supra* note 4.

<sup>22</sup> See generally Berger, Creeping Codification, *supra* note 5, 10 *et seq.*

<sup>23</sup> On problems of localisation of actors and actions on the internet see Reed, C., *Internet Law*, 2<sup>nd</sup> Edition, Cambridge University Press, Cambridge, 2004, chapter 7.

<sup>24</sup> Goode, R., "Usage and its Reception in Transnational Commercial Law", 46 ICLQ 1 (1997), 31.

for the determination of international issues through arbitration.<sup>25</sup> This, however, entails that the arbitrator needs to justify in each individual case why the transnational rules employed are better than national rules.<sup>26</sup> Another problem in relation to the application of national law may stem from the determination of the particular substantive rules of the applicable national law that are to be applied in the particular case.<sup>27</sup> Furthermore, the need for international uniformity and predictability, which is even more pressing in e-business due to the absence of international initiatives and the inconclusiveness of conflict of laws methodology, is well served by the emergence of *lex informatica*. International initiatives and the process of convergence of national laws,<sup>28</sup> which are the alternatives to the *lex informatica* in this regard, are cumbersome processes not responsive to the speed of developments in international e-business. They, therefore, bear the risk of obsolescence.<sup>29</sup> The more flexible and responsive to developments *lex informatica* can replace the numerous national laws as the proper “law” of international e-business transactions, and can facilitate online arbitrators in the resolution of disputes, thereby responding to the needs of the e-business community for certainty combined to the extent possible with flexibility.

Psychological reasons may also be invoked. These include that legal arguments substantiated by rules of transnational acceptance may be more convincing in general, and may facilitate consensus or unanimity among party appointed arbitrators in the context of deliberations in particular.<sup>30</sup> There may also exist a need for neutrality of legal rules in international transactions, when the law of one of the parties would be otherwise applicable.<sup>31</sup> Further, practical reasons stemming from potential difficulties associated with the issue of proof of foreign law in international arbitration will be

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<sup>25</sup> *Ibid*, 30-31.

<sup>26</sup> De Ly, *Lex Mercatoria: Globalisation and International Self-Regulation*, *supra* note 5, 178.

<sup>27</sup> Berger, *Creeping Codification*, *supra* note 5, 14 *et seq.*

<sup>28</sup> Reed, *supra* note 23, 310 *et seq.*, proposes convergence of national laws and home county regulation for online activities.

<sup>29</sup> *Ibid*, 311, with regard to conventions bearing the risk of being overtaken by technological developments well before they have reached the second or third drafts. For the conceivable, albeit inadequate, alternatives to online arbitration applying *lex informatica* in relation to the issue of jurisdiction and applicable law in e-business transactions, including technological solutions localising the contract to a certain jurisdiction (geo-localisation), international initiatives on the modernisation of Private International Law, and convergence or harmonisation of national e-business laws see Patrikios, A.C., “Transnational Online Arbitration as the Centrepiece of Co-regulation for Cross-border E-business”, PhD Thesis, Centre for Commercial Law Studies, Queen Mary, University of London, 2006, chapter 1.1.1.(II).

<sup>30</sup> De Ly, *Lex Mercatoria: Globalisation and International Self-Regulation*, *supra* note 5, 179.

<sup>31</sup> Goode, *supra* note 24, 30.

alleviated.<sup>32</sup> Finally, economic reasons may also be invoked, given that *lex informatica* will in most cases contribute to reducing negotiation and transactional costs, e.g. by removing the need for lengthy and costly comparative law research by counsel and arbitrators, for expert opinions on foreign law or for translations. Although the method of *lex informatica* involves comparative law analysis, which may be extensive in cases where the degree of acceptance of a given rule is not clear, in most cases the analysis required will be less extensive than in the absence of any widely accepted principles. The existing compilations of *lex mercatoria* principles<sup>33</sup> and the gradual evolution of *lex informatica* potentially leading to its creeping codification will facilitate this process.

In relation to reasons specific to e-business, generally the problem of the truly delocalised nature of cross-border e-commerce necessitates a similarly delocalised or denationalised solution regarding the applicable rules of law. This premise is underscored by the increase in the volume of e-commerce transactions, by the pace of technological and business developments in the field, by the aggravation of the inadequacy of private international law tests when applied to internet transactions, and by the absence of widely adopted international initiatives. All factors contribute to

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<sup>32</sup> On the issue of proof of foreign law in this context see De Ly, *Lex Mercatoria: Globalisation and International Self-Regulation*, *supra* note 5, 179 and generally Lew *et al*, *supra* note 10, 18-8 *et seq*. Here, however, proof of transnational rules is also an issue, which codifications and lists, see following note, help alleviate.

<sup>33</sup> See the open-ended CENTRAL List of Principles compiled by the team of Berger available through a constantly updated online transnational law database, <http://www.tldb.de>; see also CENTRAL List of Principles, Rules and Standards of the Lex Mercatoria 1996, in CENTRAL (ed), *Transnational Law in Commercial Legal Practice*, Münster, Quadis Publishing, 1999; Berger, *Creeping Codification*, *supra* note 5, 206 *et seq*. Notable earlier efforts include those of Lando, *Lex Mercatoria*, *supra* note 5; Lando, *The Law Applicable to the Merits of the Dispute* in Sarcevic (ed), *supra* note 5; and, Mustill, *supra* note 5. Lando and Mustill reached differing conclusions; however, their lists have been considered in arbitration awards as incorporating general principles, and have often been cited in support of *lex mercatoria*, see Lew *et al*, *supra* note 10, 18-56; Berger, K.P., *International Economic Arbitration*, Deventer, The Netherlands, Boston, Kluwer Law and Taxation Publishers, 1993, 543-554, with further references and list of principles; Lowenfeld, E., "Lex Mercatoria: An Arbitrator's View", in Carbonneau (ed), *supra* note 5, 71. See also list by Paulsson, *supra* note 5, in the context of ICC arbitrations; principles cited by Gaillard and Savage, *supra* note 6, 1459 *et seq* and 818 *et seq*; the study of certain specific transnational rules in Gaillard, (ed), *Transnational Rules in International Commercial Arbitration*, *supra* note 5, 101 *et seq*. For earlier efforts see Berger, *Creeping Codification*, *supra* note 5, 213 *et seq*. See further Lew *et al*, *supra* note 10, 18-57, citing in notes 66-85 awards applying *lex mercatoria* principles encapsulated in Mustill's list. Finally, see <http://www.unilex.info>, a database for case law and commentary on the United Nations Convention on Contracts for the International Sale of Goods (CISG), 11 April 1980, [http://www.uncitral.org/uncitral/en/uncitral\\_texts/sale\\_goods/1980CISG.html](http://www.uncitral.org/uncitral/en/uncitral_texts/sale_goods/1980CISG.html), and the UNIDROIT Principles of International Commercial Contracts (The UNIDROIT Principles); the 2004 edition of the UNIDROIT Principles is available at: <http://www.unidroit.org/english/principles/contracts/main.htm>.

the law lagging considerably behind e-business. The flexible and responsive *lex informatica* may alleviate this problem. In due course, its application by online tribunals can lead to a creeping codification along the lines of the *lex mercatoria*, and will further support the development of international e-commerce usages. Moreover, the development of *lex informatica* complements the need for delocalisation or denationalisation of transnational online arbitration, and generally underpins a decentralised approach to the co-regulation of cross-border e-business.<sup>34</sup> Finally, the application of *lex informatica* not only to the dispute, but also to the underlying international e-commerce contract, has the potential to increase the competitiveness of providers of e-business, online arbitration and Online Alternative Dispute Resolution (OADR) services<sup>35</sup> across borders. This is because the relative certainty provided by a single set of transnational rules of law will be more easily acceptable by recipients of e-business services located in multiple jurisdictions than a foreign national law or the possibility of applicability of multiple laws. For the same reason, it is likely to promote confidence by recipients of such services. Additionally, the economic benefits for recipients of e-commerce and online arbitration services described in the previous paragraph could be significant in online arbitration of e-commerce disputes with low value. Hence, a single transnational legal framework for e-business contracts and pertinent online arbitration will simultaneously benefit providers and recipients of cross-border e-business and Online Dispute Resolution (ODR) services by reducing legal uncertainty and by minimising transactional and dispute resolution costs.

The preceding considerations also contribute to the discussion of legitimacy of *lex informatica*. Such legitimacy is reflected in the freedom conferred by most national arbitration laws to the parties and to a lesser extent to the arbitrators to select

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<sup>34</sup> See *infra* 1(III)-(IV).

<sup>35</sup> Although not directly applicable in OADR, the *lex informatica* contributes to more effective use of consensual ODR for cross-border e-business, by providing “the law” in the shadow of which consensual ODR such as negotiation or mediation operate.

transnational substantive rules as applicable to the dispute.<sup>36</sup> Ultimately, the legitimacy of *lex informatica* rules depends on their recognition and adoption by the participants in international e-business. Once *lex informatica* rules are defined, and provided they are accepted by the international e-business community, their application by arbitrators will be in accordance with the legitimate expectations of parties to cross-border e-business transactions. By definition, the application of rules created by the participants in international e-business themselves will have the “consent of the governed”.<sup>37</sup> As opposed to the private international law approach resulting in the application of a national law, the *lex informatica* presents overwhelming comparative advantages in terms of expertise of those producing and applying it, wide acceptance of rules and better incorporation of international e-business usages, suitability, flexibility and responsiveness to the rapid developments of the field. This is a convincing indication of its potential to better serve the needs of e-business, without totally excluding legal rules generated by states, since national legislation, case law, and international initiatives are among the sources of *lex informatica*. Therefore, for the international e-business community *lex informatica* emerges as more representative and legitimate than the mere exportation of any national law.<sup>38</sup>

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<sup>36</sup> The freedom of parties and arbitrators to apply transnational rules and trade usages instead of national law is reflected in international arbitration instruments using the term “rules of law” as opposed to “the law”. In this context, some arbitration laws accept the freedom of arbitrators to apply the *lex mercatoria* when the parties have remained silent, see e.g. French NCP article 1496; Netherlands CCP article 1054; Swiss PIL Act article 187; Lebanese New CCP article 813; Algerian CCP article 458 bis 14; see also e.g. ICC Arbitration Rules article 17(1), and AAA International Arbitration Rules article 28(1). Some arbitration laws reject this possibility see e.g. UNCITRAL Model Arbitration Law (MAL) article 28; Japanese Arbitration Law article 36(2); Spanish Arbitration Law article 34(2); German ZPO article 1051(2); Italian CCP article 834; Mexican Commercial Code article 1445; Egyptian Arbitration Law article 27; English Arbitration Act section 46(3). However, it has been argued that even where an arbitration law requires the arbitrator to apply a “law”, the striking similarity of *lex mercatoria* to a legal order may lead arbitrators to apply transnational rules, see Gaillard, *Transnational Law*, *supra* note 5, section V; Lando, *Law Applicable to the Merits in Sarcevic* (ed), *supra* note 5, 155, submits that the application of *lex mercatoria* in such cases could also be achieved when parties authorise the arbitrators to act as amiable compositeurs.

<sup>37</sup> Post, D.G., “The Unsettled Paradox: The Internet, the State and the Consent of the Governed”, *The American Lawyer* (“Plugging In”), October 1996, <http://www.temple.edu/lawschool/dpost/governance.html>. In the context of his analysis of the adoption of *lex informatica* in the European internal e-commerce market Vahrenwald, *supra* note 4, 182, states that transnational rules derive from “...a ‘democratic process’ which is justified by general acceptance through the participants in the international trade”.

<sup>38</sup> However, this postulate does not necessarily mean that the international e-business community will adopt the *lex informatica*. See *infra* 2(VI) where the issue is identified as calling for further research.

### 2.3 Online Arbitration and Co-regulation of Cross-border e-Business

The *lex mercatoria* plays a pivotal role in the self-regulation of international business.<sup>39</sup> Socio-legal research confirms the desirability of international self-regulation based on international arbitration applying transnational rules of law.<sup>40</sup> Further, the emancipation of parties and arbitrators from state interference on the issue of the applicable substantive law constitutes the minimum target of a liberal approach to arbitration.<sup>41</sup> Similarly, the development of *lex informatica* is one of the pillars of a possible decentralised and largely self-organisational system for cross-border e-business.<sup>42</sup> A strong argument for the development of *lex informatica* stems from the need to regulate truly denationalised electronic business through a scheme that provides certainty without restricting innovation and development of the field.

This can be achieved only by a regulatory scheme employing substantive rules that are flexible and responsive to rapid technological and business developments. The application of *lex informatica* rules in the context of a co-regulatory<sup>43</sup> scheme promises to serve this need. When adequately developed, it will strike a balance between the creation and establishment of sector-specific transnational rules by the participants in e-business themselves and national rules that enjoy wide acceptance in comparative law, thereby paying heed to fundamental notions of substantive international public policy. Furthermore, the proliferation of transnational online arbitration and the application of the *lex informatica* by online tribunals will eventually result in the formulation of the substantive transnational public policy of

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<sup>39</sup> See generally Dezalay, Y., Garth, B., *Dealing in Virtue: International Commercial Arbitration and the Construction of a Transnational Legal Order*, University of Chicago Press, 1996; Appelbaum *et al* (eds), *supra* note 5; Teubner (ed), *supra* note 5.

<sup>40</sup> See e.g. De Ly, *Lex Mercatoria: Globalisation and International Self-Regulation*, *supra* note 5, 167-178; Teubner, *supra* note 5, 8 *et seq.*

<sup>41</sup> *Ibid.*, 180.

<sup>42</sup> The feasibility of a self-contained, decentralised, multi-stakeholder, multi-instrument and multi-level co-regulatory system for global e-business based on ODR and centred on transnational online arbitration is examined and confirmed in Patrikios, *supra* note 29.

<sup>43</sup> Co-regulation is a hybrid of state regulation and self-regulation; see e.g. European Commission, "European Governance. A White Paper", COM(2001) 428 final, July 25 2001, [http://europa.eu.int/eur-lex/en/com/cnc/2001/com2001\\_0428en01.pdf](http://europa.eu.int/eur-lex/en/com/cnc/2001/com2001_0428en01.pdf), 27 note 6; Final Report of the Mandelkern Group on Better Regulation, 13 November 2001 (Mandelkern Report), [http://www.simplification.fgov.be/downloads/Mandelkern\\_Group\\_Final.pdf](http://www.simplification.fgov.be/downloads/Mandelkern_Group_Final.pdf), 15 note 9; Marsden, C.T., "Co- and Self-regulation in European Media and Internet Sectors: The Results of Oxford University's Study, [www.selfregulation.info](http://www.selfregulation.info)", in OSCE, "Self-regulation, Co-regulation, State Regulation", 2004, [http://www.osce.org/publications/rfm/2004/12/12239\\_93\\_en.pdf](http://www.osce.org/publications/rfm/2004/12/12239_93_en.pdf), 76-100.

e-business, by which online arbitrators should abide.<sup>44</sup> In other words, *lex informatica* has the potential to strike the finest possible balance between freedom for business and the need for regulation with regard to the applicable substantive rules of law. At the same time it will facilitate the resolution of disputes by providing transnational online arbitrators with a defined framework of operation for the identification of applicable substantive rules. Finally, because of the diversification of its sources and its truly international and decentralised nature, the *lex informatica* is in absolute harmony with the multi-stakeholder, multi-instrument and multi-level approach to internet governance that has emerged from the WSIS process.<sup>45</sup>

## 2.4 Delocalisation/Denationalisation of Transnational Online Arbitration

The concept of delocalisation or denationalisation of arbitration refers to the detachment of the arbitration procedure and award from the control of national courts and laws.<sup>46</sup> At present, alternative routes could be more suitable for the detachment of the online arbitration procedure from the law of the seat, however on particular occasions the delocalisation or denationalisation of online arbitration may be appropriate.<sup>47</sup> In this context an additional argument for the introduction of *lex informatica* rules to online arbitration of e-business disputes could be derived from the need to detach online arbitration of such disputes from national law, with regard to both procedural and substantive aspects. The application of transnational substantive rules through denationalised online arbitration would consist the pinnacle of autonomy of e-business and online arbitration from national law.

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<sup>44</sup> This is among the issues calling for further research, see *infra* 2(VI). On the transnational public policy of international arbitrators see generally Lalive P., Patocchi, P. M., “Transnational (or Truly International) Public Policy and International Arbitration”, in International Council for Commercial Arbitration Congress Series No 3 (New York/1986), 258-318.

<sup>45</sup> <http://www.itu.int/wsisis/>. See the Geneva Declaration of Principles, WSIS-03/GENEVA/DOC/4-E, 12 December 2003, paras 48–50; the principles were reaffirmed and enhanced in the Tunis Commitment, WSIS-05/TUNIS/DOC/7-E, 18 November 2005, para 37, and the Tunis Agenda for the Information Society, WSIS-05/TUNIS/DOC/6(Rev.1)-E, 15 November 2005, paras 66, 68, 73, and 81.

<sup>46</sup> See e.g. the famous articles by Jan Paulsson, “Arbitration Unbound: Award Detached from the Law of its Country of Origin”, 30 ICLQ 368 (1981); “Delocalisation of International Commercial Arbitration: When and why it matters”, 32 ICLQ 54 (1983); “The Extent of Independence of International Arbitration from the Law of the Situs”, in Lew (ed), *supra* note 5, 141-148; “The Case for Disregarding Local Standard Annulments under the New York Convention”, 7 Am Rev Int Arb 99 (1996); and, “L’Exécution des Sentences Arbitrales Dans le Monde de Demain”, Rev Arb 637 (1998).

<sup>47</sup> Patrikios, *supra* note 29, chapter 3.1.1.(II)-(V), with elaboration on the reasons for and the ways of achieving the complete detachment of transnational online arbitration of e-disputes from national courts and laws.

## 2.5 Potential Obstacles

Objections to the development of *lex informatica* may be based on the same conceptual, ideological and practical reasons invoked by opponents of the *lex mercatoria*.<sup>48</sup> Although opposing views are in retreat,<sup>49</sup> they have not disappeared. An additional general argument against criticism is that the necessity to develop transnational rules is even more pressing and appropriate in international e-business than in international trade, because of the absence of international initiatives and the further aggravation of the adverse effects of the application of conflict of law rules. Further, the considerations cited in justification of the need for *lex informatica* provide adequate responses.<sup>50</sup> Ultimately, the success or failure of the concept of *lex informatica* lies with its reception by the international e-business community. If it is accepted and applied as is the case with the *lex mercatoria*, then academic opposition will have minimal practical effects. Conversely, if it is rejected academic support may prove immaterial. It is therefore crucial to explore the willingness of the e-business community to adopt the *lex informatica*.<sup>51</sup>

New twists to these old considerations could be given in our context by three issues. Firstly, given the nascent state of *lex informatica* and the consequent absence of comprehensive comparative research, of any codification attempts specific to e-business, and of published precedents applying *lex informatica* rules, arguments could be raised against the substitution of vague transnational rules for clear national rules.

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<sup>48</sup> Opposition focused on the following points: the paucity of principles of *lex mercatoria*; their relative vagueness, and consequent uncertainty that rendered *lex mercatoria* imperfect and incomplete; unsuitability to qualify as a valid choice of law, let alone as a legal system; doubtful existence; that it essentially consisted a doctrine of laissez-faire, favouring strong parties in particular from developed countries and therefore that the debate around the lex consisted a social and political battle over the sources of international commercial and economic law; lack of transparency, because of insufficient reasoning in arbitral awards and rare publication of awards; that the lex was not universal, and was only exceptionally applied by arbitral tribunals and not acceptable by national courts. For a review of criticism on these grounds and responses see Berger, *Creeping Codification*, *supra* note 5, 43 *et seq*; Gaillard and Savage, *supra* note 6, 1450 *et seq*.

<sup>49</sup> Gaillard, *Transnational Law*, *supra* note 5, 59. Initially the opposition focused on the denial of the very existence of a transnational alternative to substantive rules of a given legal system. Subsequently, it evolved to acceptance of the existence of the *lex mercatoria* but denial of its advisability as an option available to the parties. Finally, it was reduced to acceptance of the availability of the *lex mercatoria* as an option open to the parties but denial of its availability as an option open to arbitrators in the absence of a choice of law by the parties. This latter aspect forms the current point of conflict between proponents and opponents of the *lex mercatoria*, and is reflected in a division between arbitration laws that accept the freedom of arbitrators to apply the *lex mercatoria* when the parties have remained silent and arbitration laws that do not, see *supra* note 36.

<sup>50</sup> *Supra* 1(II).

<sup>51</sup> Which is an issue calling for further research, see *infra* 2(VI).

This argument could be countered on two bases: firstly that the application of national law entails the difficulty of applying conflict of laws to cross-border internet transactions, which may result in a potentially inadequate national law. Secondly, as with *lex mercatoria*, the application of *lex informatica* by international tribunals will gradually lead to its development and creeping codification. Similarly, the present relative scarcity of sources of *lex informatica* may create problems in the identification of applicable rules. However, as we illustrate in the following section, the practice of cross-border e-business has already produced sources of transnational e-business law. In due course, this issue will be fully remedied by additional sources of *lex informatica* that will be produced as a result of the steady growth of international e-business. Finally, the ideological criticism that *lex mercatoria* serves the interests of the stronger parties, in particular those from the developed world, could be possibly aggravated in our context by the fact that the digital divide potentially adds a further layer of legitimate concerns. The answer could be derived from well established transnational principles that intend to protect weaker parties,<sup>52</sup> such as the *contra proferentem* principle,<sup>53</sup> requiring in case of doubt as to the meaning the interpretation of the contract against the party that drafted it. Actual online arbitration practice offers examples of arbitrators giving preference to the rule favouring the weaker party. For instance, in the context of B2C online arbitration under the auspices of the Chartered Institute of Arbitrators (CIArb),<sup>54</sup> the B2C rules contain a more-favourable-rights provision, according to which arbitrators apply the set of rules (applicable legal provisions or code of conduct) that is most favourable to the consumer.<sup>55</sup> Further, it is likely that in due course transnational principles reflecting considerations specific to the protection of weak parties in e-business will emerge. Such protective principles can already be found in several initiatives, particularly codes of conduct and guidelines, establishing principles of consumer

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<sup>52</sup> See Gaillard and Savage, *supra* note 6, 1451-1453.

<sup>53</sup> CENTRAL Principle No IV.4.3.

<sup>54</sup> <http://www.arbitrators.org>.

<sup>55</sup> See CIArb ABTA Rules, <http://www.arbitrators.org/abta/Rules.htm>, article 1.8. For the general application of such a provision in CIArb B2C online arbitration see interview with Gregory Hunt, Manager of the Dispute Resolution Services of the CIArb, in Kaufmann-Kohler, G., Schultz, T., Online Dispute Resolution, Challenges for Contemporary Justice, Kluwer Law International, The Hague, 2004, Annex IV.2, 300, also noting that in the FordJourney online arbitration scheme of the CIArb arbitrators apply general principles of law.

protection in e-commerce and ODR.<sup>56</sup>

### **3. Transposition of Transnational Substantive Rules Method to Online Arbitration**

The introduction of the substantive rules method to online arbitration of cross-border e-business disputes is effected through the transposition of the substantive and methodological components of *lex mercatoria*, subject to certain qualifications stemming from the particularly rapid development of e-business.

The practice of cross-border e-business has already produced sources of transnational rules of law. Established rules of *lex mercatoria* and emerging rules of *lex informatica* can be applied to e-business disputes by online arbitrators on the basis of the functional method of transnational rules of law.<sup>57</sup> Given the high degree of specialisation of issues that may arise in the various sectors of e-business and the expansive nature of *lex informatica*, the scope of application of transnational rules should be delimited on a sector-by-sector basis. Further, the enforceability of awards based on the *lex informatica* is undisputable. However, only an estimate on the content of emerging rules of *lex informatica*, and on the meaning that existing rules of *lex mercatoria* assume in the context of e-business is possible within the confines of this paper. The determination of the content of transnational rules of e-business law is an issue calling for further systematic research. The results of such research can form the basis for the creeping codification of the *lex informatica* as a means of facilitation of the identification of transnational rules by e-businesspeople and online arbitrators.<sup>58</sup>

#### **3.1 Sources of Lex Informatica**

*Lex informatica* rules are founded on general principles of law, international instruments, international uniform laws, international case law including reported arbitral awards, national and supranational instruments and case law pertaining to cross-border e-business, e-business custom and usages, standard contracts and

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<sup>56</sup> For the function of such initiatives as sources of *lex informatica* see *infra* 2(I)(vi); for the possibility that such sources point to an embryonic *lex consumentiae internationalis* see *infra* 2(III).

<sup>57</sup> *Infra* 2(IV).

<sup>58</sup> For an early call for a statement of cyber-contractual customs available online and constantly restated see Johnson, New Case Law of Cyberspace, *supra* note 4.

clauses, and codes of conduct.<sup>59</sup> In this regard some general observations are necessary.

Firstly, existing *lex mercatoria* principles, especially those reflecting general principles of law, are directly transposable to e-business. However, in the context of e-business they may assume a specific meaning which needs to be identified. Secondly, as opposed to *lex mercatoria*, a relative scarcity of *lex informatica* sources is observable in these early days of cross-border e-business. This can be remedied in due course, as e-business and online arbitration develop. The scarcity of sources is particularly evident in relation to international case law including arbitral awards, let alone arbitral awards applying *lex informatica*. This is attributable partly to the fact that cross-border e-business has so far given rise to relatively few arbitrations and partly to arbitral confidentiality. The scarcity of pertinent case law will also be remedied through the development of the field. However, a significant qualification in this regard is that the value of precedents may be of even less importance in online arbitration of e-disputes than it is in international arbitration of trade disputes, owing to the fact that reliance on precedent and stability is a value that is not in accordance with the evolving character, flexibility and constant change that occur on the internet.<sup>60</sup> In other words, in online arbitration of e-business disputes precedent, as well as any codification of *lex informatica* for that matter, should only have a supportive function, and should not bind online arbitrators in the determination of the dispute, in order to ensure the unrestricted development and dynamic application of transnational principles and rules of e-business law. The rapid evolution of practices and usages, and the relatively brief time required for their maturity into custom<sup>61</sup> are further corollaries of the rapid pace of development and the increasingly high number of transactions in e-business. Thus, the determination of the dispute should be performed on a case-by-case basis taking into account the specific circumstances of

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<sup>59</sup> Based on the definition of *lex mercatoria* by Goldman, *The Applicable Law: General Principles of Law*, *supra* note 5, 113. For similarly wide views see e.g. Schmitthoff, C., *The Sources of the Law of International Trade*, 1964 ; Lew *et al*, *supra* note 10, 18-47 - 18-48; Gaillard and Savage, *supra* note 6, 1447, underscoring the relationship between general principles of international commercial law and principles of public international law, see also Lew, *supra* note 5, 444 and 583. See also Lando, *The Law Applicable to the Merits of the Dispute* in Sarcevic (ed), *supra* note 5, 144 *et seq*, acknowledging the impossibility of providing an exhaustive list of the elements of *lex mercatoria*.

<sup>60</sup> Katsh, E., "Cybertime, Cyberspace and Cyberlaw", 1995 *Journal of Online Law*, art 1, para 28, <http://www.law.cornell.edu/jol/katsch.htm>.

<sup>61</sup> *Infra* 2(I)(iv).

each case and the current state of the art in e-business. This approach is in harmony with the functional method of application of transnational substantive rules.<sup>62</sup>

We now turn to the identification of existing *Lex Informatica* sources.

### 3.1.1 General Principles of Law and Relevance of *Lex Mercatoria* Principles

Generally, several rules of *lex mercatoria*, in particular those enshrining general principles of law, such as good faith and fair dealing, *pacta sunt servanda*, *rebus sic stantibus*, unenforceability or invalidity of contracts obtained by illegal or dishonest means or that are designed to achieve an illegal object etc, are directly transposable to *lex informatica*, without it being necessary for them to be derived from e-business sources. However, certain of these general principles, e.g. good faith and fair dealing, may assume a specific meaning in cross-border e-business that may require clarification or specific justification from an e-business perspective.<sup>63</sup>

### 3.1.2 International Instruments and Uniform Laws

With regard to international instruments and uniform laws, the UNCITRAL initiatives are of particular importance as sources of *lex informatica* principles and rules. The e-commerce<sup>64</sup> and e-signatures<sup>65</sup> Model Laws are prime examples of instruments demonstrating international consensus stemming from their legislative history, and as far as the Model e-Commerce Law is concerned from the numerous jurisdictions that have adapted their legislation to its provisions.<sup>66</sup> The Model e-Commerce Law demonstrates international consensus on issues such as, *inter alia*, the legal recognition of data messages,<sup>67</sup> incorporation by reference,<sup>68</sup> admissibility and evidential weight of data messages,<sup>69</sup> formation and validity of contracts,<sup>70</sup> and

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<sup>62</sup> *Infra* 2(IV).

<sup>63</sup> See *infra* 2(II).

<sup>64</sup> The UNCITRAL Model Law on Electronic Commerce with Guide to Enactment, 12 June 1996, with additional article 5 bis as adopted by the Commission at its thirty-first session in June 1998, [http://www.uncitral.org/uncitral/en/uncitral\\_texts/electronic\\_commerce/1996Model.html](http://www.uncitral.org/uncitral/en/uncitral_texts/electronic_commerce/1996Model.html).

<sup>65</sup> UNCITRAL Model Law on Electronic Signatures with Guide to Enactment, 5 July 2001, [http://www.uncitral.org/uncitral/en/uncitral\\_texts/electronic\\_commerce/2001Model\\_signatures.html](http://www.uncitral.org/uncitral/en/uncitral_texts/electronic_commerce/2001Model_signatures.html).

<sup>66</sup> Twenty five countries have adopted, adapted or have been influenced by the Model e-Commerce Law and only China, Mexico and Thailand have adopted legislation based on the Model e-Signatures Law, see <http://www.uncitral.org>.

<sup>67</sup> Article 5.

<sup>68</sup> Article 5 bis.

<sup>69</sup> Article 9.

<sup>70</sup> Article 11.

attribution of data messages.<sup>71</sup> The Model e-Signatures Law includes provisions on issues such as, *inter alia*, equal treatment of signature technologies,<sup>72</sup> compliance with a requirement for a signature,<sup>73</sup> conduct of the signatory,<sup>74</sup> and conduct of the relying party.<sup>75</sup>

The UN e-Contracting Convention<sup>76</sup> reflects broad consensus despite the fact that it was only recently opened for signature.<sup>77</sup> It includes provisions on issues such as, *inter alia*, legal recognition of electronic communications,<sup>78</sup> form requirements,<sup>79</sup> including the principle of functional equivalence of electronic documents<sup>80</sup> and electronic signatures,<sup>81</sup> time and place of dispatch and receipt of data messages,<sup>82</sup> use of automated systems for contract formation<sup>83</sup>, availability of contract terms<sup>84</sup>, and error in electronic communications<sup>85</sup>. Depending on its adoption by a significant number of states and, most importantly, on the acceptance of its rules by the international e-business community, the e-Contracting Convention may in due course develop into an instrument directly applicable by online arbitrators in e-business disputes pursuant to *lex informatica* analysis.<sup>86</sup>

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<sup>71</sup> Article 13.

<sup>72</sup> Article 3.

<sup>73</sup> Article 6.

<sup>74</sup> Article 8.

<sup>75</sup> Article 11.

<sup>76</sup> The United Nations Convention on the Use of Electronic Communications in International Contracts, A/60/515, 23 November 2005, [http://www.uncitral.org/uncitral/en/uncitral\\_texts/electronic\\_commerce/2005Convention.html](http://www.uncitral.org/uncitral/en/uncitral_texts/electronic_commerce/2005Convention.html). The official text of the e-Contracting Convention, A/60/515, incorporating the changes agreed at the 38<sup>th</sup> UNCITRAL session, was released as an annex to UNCITRAL's report to the General Assembly, see A/60/17, 26/7/2005, Annex I, 65. It was adopted by the UN General Assembly on 23/11/2005 and is open for signature from 16/1/2006 to 16/1/2008, see General Assembly Press Release L/3099, 23/11/2005. The first country to sign the Convention was the Central African Republic on 27/2/2006. The Convention complements and builds upon the e-commerce and e-signatures Model Laws.

<sup>77</sup> For the use of international treaties not in force by arbitrators as a means of determining broad consensus see Gaillard, *Transnational Law supra* note 5, section I(b).

<sup>78</sup> Article 8.

<sup>79</sup> Article 9.

<sup>80</sup> Articles 8(1) and 9(2).

<sup>81</sup> Article 9(3).

<sup>82</sup> Article 10.

<sup>83</sup> Article 12.

<sup>84</sup> Article 13.

<sup>85</sup> Article 14.

<sup>86</sup> Along the lines of the direct application of the CISG by international arbitrators in sales of goods disputes. The CISG, currently estimated to be applicable to two thirds of world trade, see <http://www.cisg.law.pace.edu>, and its rules are commonly being applied by arbitral tribunals for the resolution of international sales of goods disputes, see Lew *et al*, *supra* note 10, 18-70 and awards cited therein.

On the basis of the three UNCITRAL initiatives a basic framework of fundamental transnational principles and rules for the conduct of cross-border e-business can be articulated. Beyond providing specific rules for the issues of their respective area of application, they may also be employed as sources of general principles of e-business such as functional equivalence of written and electronic documents,<sup>87</sup> functional equivalence of written and electronic signatures,<sup>88</sup> or technological/medium neutrality.<sup>89</sup> In the context of application of the *lex informatica*, the UNCITRAL instruments can be used by online arbitrators as instruments directly applicable in online arbitration,<sup>90</sup> as benchmarks in the context of comparative law analysis for the establishment of the broad acceptance of a given transnational rule,<sup>91</sup> as means of identification of e-business usages,<sup>92</sup> or as means of interpretation.<sup>93</sup>

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<sup>87</sup> See Model e-Commerce Law articles 5 and 6; e-Contracting Convention articles 8(1) and 9(2). The principle of functional equivalence of electronic communication means such as telex and telefax is so widely accepted that already forms a part of *lex mercatoria*, see e.g. rule 57 in the list of Berger, Creeping Codification, *supra* note 5, 302; CENTRAL Principles Rule No. XIII.2 on Proof of written Content.

<sup>88</sup> See Model e-Signatures Law articles 2 and 6; Model e-Commerce Law article 7; e-Contracting Convention articles 8(1) and 9(3).

<sup>89</sup> See Model e-Signatures Law article 3; e-Contracting Convention article 9(3).

<sup>90</sup> As has been the case with the CISG and the UNIDROIT Principles, which arguably constitute the product or even a source of *lex mercatoria*, see e.g. Berger, Practice of Transnational Law, *supra* note 5; Lew *et al*, *supra* note 10, 18-49 and 18-55, citing a number of awards using the CISG as the means of determination of international trade usages and *lex mercatoria*. With regard to the UNIDROIT Principles see e.g. the third paragraph of the Preamble of the Principles according to which they may be applied when parties refer to "... general principles of law", the *lex mercatoria* or the like" and the fourth paragraph "They may be applied when parties have not chosen any law to govern their contract". The UNIDROIT Principles are increasingly adopted in international contracts and used in dispute resolution, see Bonnel, M.J., "UNIDROIT Principles 2004 – The New Edition of the Principles of International Commercial Contracts Adopted by the International Institute for the Unification of Private Law", ULR 5 (2004). They have been applied as applicable law to international sales contracts, see awards cited by Lew *et al*, *supra* note 10, 18-66 note 97; they were even applied without express reference by the parties in at least two cases, see Bonnel, M.J., "A "Global" Arbitration Decided on the Basis of the UNIDROIT Principles: *In Re Andersen Consulting Business Unit Member Firms v Arthur Andersen Business Unit Member Firms and Andersen Worldwide Société Coopérative*", 17 Arb Int'l 249 (2001), and awards cited by Lew *et al*, *supra* note 10, 18-66 note 98. They have also been used in international arbitrations as means of interpretation of domestic law, see awards cited by Lew *et al*, *supra* note 10, 18-67 note 99, and the sixth paragraph of the UNIDROIT Principles Preamble stating that the principles may be used to interpret or supplement domestic law; and, as means of interpretation of international uniform law, see Lew *et al*, *supra* note 10, note 100, and the seventh paragraph of the UNIDROIT Principles Preamble, according to which the principles may be used to interpret or supplement international uniform law.

<sup>91</sup> In the context of the functional method employed for the application of *lex informatica* rules, see *infra* 2(IV).

<sup>92</sup> E.g. the Model e-Commerce Law consists a codification of merchant practices, see Reed, *supra* note 23, 309.

<sup>93</sup> As has been the case with the UNIDROIT Principles, see *supra* note 90. See further Guide to Enactment of the Model e-Commerce Law paragraph 5 and Guide to Enactment of the Model e-Signatures Law paragraph 11.

Finally, in relation to domain name registration, it has been suggested that by defining a set of substantive law elements, which are made the rules of law applicable to disputes concerning domain names irrespective of whether they reflect national law perceptions, the UDRP of ICANN may consist a new addition to the *lex mercatoria* and perhaps the start of something broader.<sup>94</sup> The premise that the UDRP adds a new element to transnational rules of law of e-commerce has been rejected on the grounds of the non-binding nature of the UDRP and the doubtful applicability of the principles of UDRP by arbitral tribunals dealing with domain names and trademark disputes, given that the registration of trademarks involves the public policy of the state of registry.<sup>95</sup> Whereas there are merits in both approaches, the approach conceptualising the UDRP rules as *lex mercatoria/lex informatica* rules is more convincing. Transnational rules are defined negatively, on the basis that they do not originate from a given national jurisdiction, and positively, on the basis of wide acceptance by the international legal and business communities.<sup>96</sup> UDRP rules satisfy both criteria. In particular, within the context of UDRP dispute resolution, the publicity of UDRP decisions contributes to the formulation of rules,<sup>97</sup> in a process that resembles the process of formulation of transnational rules of e-business law. Further, the inclusion of the UDRP as part of *lex informatica* is in accordance with the wide view regarding the sources of *lex informatica* followed in this paper.<sup>98</sup> However, even if the UDRP is not viewed as part of *lex informatica* and as directly applicable by arbitrators for the determination of domain name disputes, the policy itself and the impressively high number of decisions rendered under the UDRP,<sup>99</sup> may be used by arbitrators as benchmarks for the determination of the wide acceptance of a given rule of law. So even if not a source of *lex informatica*, the UDRP is one of the benchmarks for

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<sup>94</sup> Davis, *supra* note 4, 137.

<sup>95</sup> Vahrenwald, *supra* note 4, 184.

<sup>96</sup> *Supra* 1(I).

<sup>97</sup> Katsh, "Online Dispute Resolution: Some Implications for the Emergence of Law in Cyberspace", 10(3) *Lex Electronica* 2006, <http://www.lex-electronica.org/articles/v10-3/katsh.htm>, 10. See also <http://arbiter.wipo.int/domains/search/overview/index.html?lang=eng> providing an overview of WIPO panel views on selected UDRP issues.

<sup>98</sup> *Supra* 2(I).

<sup>99</sup> As per 21 January 2006 WIPO had rendered 7846 decisions on gTLDs and 275 on ccTLDs, see <http://arbiter.wipo.int/domains/statistics/cumulative/results.html>; the (US) National Arbitration Forum listed 6049 domain name dispute proceedings and decisions, 5594 of which were under the UDRP, see <http://www.arb-forum.com/domains/decisions.asp>; ADNDRC had reported over 120 gTLD decisions see, [http://www.adndrc.org/adndrc/bj\\_statistics.html](http://www.adndrc.org/adndrc/bj_statistics.html); and CPR over 117 gTLD decisions, see [http://www.cpradr.org/ICANN\\_Cases.asp?M=1.6.6](http://www.cpradr.org/ICANN_Cases.asp?M=1.6.6).

transnational recognition of standards for the determination of rights over domain names. At the very least, the UDRP could function as an instrument of interpretation.

### 3.1.3 National and Supranational Sources

To the extent that they are applicable to international transactions, national statutes and case law on e-business are sources of *lex informatica*. The various national statutes<sup>100</sup> may be employed by online arbitrators in the context of their comparative analysis for the determination of the extent of acceptance of a given rule of *lex informatica*. The same is true for supranational instruments such as the EU directives on e-commerce<sup>101</sup> and e-signatures.<sup>102</sup> The particular importance of the directives lies in the fact that they demonstrate transnational recognition of electronic contracts and signatures and contain a consensus model for their regulation, which is applicable to both common and civil law systems.

From another perspective, the legal inventiveness of the legislative draftsmen who first deal with a new e-business issue has a paradigmatic effect on legislators in other jurisdictions; inevitably, the first expression of a new e-business issue on legislative terms becomes a template for later draftsmen.<sup>103</sup> Depending on the circumstances of the case, this effect may facilitate or complicate the substantiation of a recent differentiated rule, which may better reflect the contemporary state of the art in e-business, as having a wide transnational acceptance pursuant to the functional method of application of transnational rules. This consideration requires that in determining the “transnationality” of a given rule, online arbitrators should base their decision not only on the wide acceptance of the rule in comparative law, but also on the current

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<sup>100</sup> E.g. the US Electronic Signatures in Global and National Commerce Act 2000 (US E-sign Act) and the Uniform Electronic Transactions Act 1999 (US UETA); the UK Electronic Communications Act 2000, the Electronic Commerce (EC Directive) Regulations 2002, and the Electronic Signatures Regulations 2002; the Australian Electronic Transactions Act 1999 (Australian ETA) and Electronic Communications Act 1999; the German Digital Signature Act 2001; the Electronic Transactions Ordinance 2001 of Hong Kong; the Singaporean Electronic Transactions Act 1998.

<sup>101</sup> Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market, OJ L 178/1 of 17/7/2000, <http://europa.eu.int/eur-lex/>.

<sup>102</sup> Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community Framework on Electronic Signatures, OJ L13/12, 19/1/2000, <http://europa.eu.int/eur-lex/>.

<sup>103</sup> Reed, *supra* note 23, 309, invoking the global digital signature legal infrastructure, based to a large extent on the solutions of the Utah Digital Signature Act 1996, as the most striking example. See however the differentiation of the US E-Sign Act and the Australian ETA which are simpler, less prescriptive and technologically neutral.

practice in the particular sector of e-business. If a recent rule reflects current practice but is not supported by the results of comparative law analysis, its “transnationality” could be founded on usage.<sup>104</sup>

### 3.1.4 E-business Custom and Usages

The constantly increasing volume of international e-business transactions sustains the rapid development of usages of cross-border e-business. Two general comments must be made in this regard. Firstly, since we are still in the early days of e-commerce, and given the rapid technological and entrepreneurial developments in the field, the existing usages may not always be easy to identify, in which case online arbitrators may resort to expert opinion. Secondly, for the same reasons, it is still too early to suggest that there currently exists an established customary law of international e-business. However, it can be argued that the maturity of trade practices, usages and standards into custom is not so much a question of time, but rather a question of wide use of practices, which are accepted as binding norms by traders and are formulated by international agencies, such as the ICC.<sup>105</sup> Given the high volume of e-commerce transactions, elements of customary practices are already identifiable or are even being formulated by international agencies. Therefore, the development of custom in international e-business is likely to be faster than it is in international trade. In fact it could be established in the near future.<sup>106</sup> Because of the rapid development and consequent change in e-business, the evolution of established custom will also be more rapid. This should be borne in mind by online arbitrators in the context of the determination of the *lex informatica* rules applicable to a particular economic relationship. In this context the arrangements of the parties themselves, including any usage established between the parties, are of paramount importance.

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<sup>104</sup> *Infra* 2(IV).

<sup>105</sup> Schmitthoff, C., in Cheng, C. (ed) Clive M. Schmitthoff's Selected Essays on International Trade Law, 1988.

<sup>106</sup> See Polanski and Johnston, *supra* note 4, 5-6. The authors advocate e-custom as source of international e-commerce law. In this regard see also Balah, *supra* note 4; Polanski, P., “A New Approach to Regulating Internet Commerce: Custom as a Source of Electronic Commerce Law”, 9(3) *El. Com. L R*, 165 (2002). Further, several authors have advocated custom as source of internet law in general, see authors cited in *supra* note 4, particularly, Johnson, *New Case Law of Cyberspace*.

It has been argued that coherent usages of international e-commerce have not yet developed.<sup>107</sup> However, the custom and practice of e-business is starting to develop from contracts drafted by specialist lawyers.<sup>108</sup> Further, international e-business usages and practices in aspects of e-commerce, such as validity and enforceability of electronic contracting, time and place of dispatch and receipt of electronic communications, or attribution of communications, have started to emerge and may be evidenced by the provisions of existing international instruments,<sup>109</sup> uniform laws<sup>110</sup> and national legislation,<sup>111</sup> or are already being formulated by international agencies in the form of standard contracts and agreements,<sup>112</sup> codes of conduct and guidelines.<sup>113</sup> Therefore, e-business usages and practices exist and may be used by online arbitrators as sources of *lex informatica*. Further, through their application in a large number of transactions, or even through their formulation by international agencies such as the ICC, some usages and practices are already maturing into custom.

Finally, it can be argued that elements of non-codified custom are also observable. For example,<sup>114</sup> in important interactions over the internet there exists an obligation to use appropriate state of the art security technology as means of protection of the confidentiality, integrity and attribution of communications. Arguably, this obligation is borne by the parties even when not specifically provided for in the underlying contract or agreement. The exact content of the obligation, the sophistication of the security technology and the consequences of non-compliance depend on the context of the interaction. For example, the non-compliance of a bank or of a professional end-user in the context of online banking may trigger liability for compensation.<sup>115</sup>

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<sup>107</sup> Vahrenwald, *supra* note 4, 178.

<sup>108</sup> Reed, *supra* note 23, 309.

<sup>109</sup> I.e. the UN e-Contracting Convention.

<sup>110</sup> I.e. the UNCITRAL Model Laws on e-Commerce and e-Signatures. The Model e-Commerce Law in particular can be viewed as a codification of merchant practice since it “*is closely based on a number of model Electronic Data Interchange agreements*”, see Reed, *supra* note 23, 309.

<sup>111</sup> E.g. the provisions on time and place of receipt in the US UETA and the Australian ETA “*are based on the most commonly used commercial contract terms*”, Reed, *supra* note 23, 309.

<sup>112</sup> E.g. the ICC eTerms 2004; the ICC General Usage for International Digitally Ensured Commerce II (GUIDEC II) including the Principles of Fair Electronic Contracting (POFEC); the UN/CEFACT Electronic Commerce Agreement; see *infra* 2(II)(v).

<sup>113</sup> E.g. the ICC Guidelines for Advertising and Marketing on the Internet; the FEDMA “Code of Conduct on E-Commerce and Interactive Marketing”; see *infra* 2(II)(vi).

<sup>114</sup> Another example would be the presumption of IT competence of professional parties engaging in e-business, see *infra* 2(II).

<sup>115</sup> Polanski and Johnston, *supra* note 4, 4.

Similarly, the non-compliance of an online arbitral institution may lead to its liability if the confidentiality of the online arbitration is compromised.<sup>116</sup>

### 3.1.5 Standard Contracts and Agreements

To the extent that they are widely adopted by the international e-business community, standard contracts and clauses may also be used by online arbitrators either as direct sources of transnational rules or as means of identification of e-business usages. Existing standard e-business contracts and agreements include the ICC eTerms 2004, which are intended to be incorporated into contracts for the sale or other disposition of goods, rights or services, in order to enhance the legal certainty of contracts made by electronic means including by email, EDI or through a website.<sup>117</sup> Also, the ICC General Usage for International Digitally Ensured Commerce II (GUIDEC II) including the Principles of Fair Electronic Contracting (POFEC), aim to serve as an indicator of terms and contain definitions and best practices. GUIDEC I “*aimed to balance different legal traditions and cover both the civil and common-law treatment of the subject, as well as pertinent international principles*” and “*provided a comprehensive statement of best practices for a global infrastructure*”.<sup>118</sup> Further, on the basis of existing law and practice in different legal systems the GUIDEC establishes a framework for the authentication of digital messages by treating

*the core concepts, best practices and certification issues in the context of international commercial law and practice. In so doing, the document assumes practices in which transacting parties are expert commercial actors, operating under the lex mercatoria.*<sup>119</sup>

This statement implies that the GUIDEC is perceived as part of *lex mercatoria* and *lex informatica*. In addition, the ICC is currently developing model clauses on electronic contracting<sup>120</sup> and electronic contracting rules.<sup>121</sup> Further, the UN/CEFACT

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<sup>116</sup> See Patrikios, *supra* note 29, chapter 2.2. (III), discussing the potential liability of online arbitrators and online arbitration institutions.

<sup>117</sup> <http://www.iccwbo.org/policy/law/id3668/index.html>. The eTerms 2004 are accompanied by a Guide to eContracting explaining the application of the eTerms 2004 and providing a list of practical steps for the facilitation of eContracting, <http://www.iccwbo.org/policy/law/id3670/index.html>.

<sup>118</sup> See foreword to the GUIDEC II by William Kennair, [http://www.iccwbo.org/home/guidec/guidec\\_two/foreword.asp](http://www.iccwbo.org/home/guidec/guidec_two/foreword.asp). GUIDEC II is available at <http://www.iccwbo.org/law/>.

<sup>119</sup> *Ibid.*

<sup>120</sup> See <http://www.iccwbo.org/law/clauses/>.

<sup>121</sup> See <http://www.iccwbo.org/law/commission/taskforces/econtracting/>.

Electronic Commerce Agreement<sup>122</sup> offers a model for contracts of electronic commerce among businesses. It provides a framework of basic provisions that allow the flexibility necessary for commercial transactions while ensuring that e-commerce transactions can be concluded in a sound legal framework. The e-agreement consists of an instrument of offer and an instrument of acceptance and is concluded by the exchange of the two documents.

### 3.1.6 Codes of Conduct and Guidelines

Finally, relevant codes of conduct and guidelines may serve as sources of *lex informatica*. These include the ICC Guidelines for Advertising and Marketing on the Internet,<sup>123</sup> and the FEDMA Code of Conduct on E-Commerce and Interactive Marketing.<sup>124</sup> Furthermore, in the field of consumer e-commerce governments, international organisations, business organisations and consumer organisations have been particularly prolific. Several guidelines and codes of conduct addressing issues of consumer protection have been promulgated.<sup>125</sup> Arguably, along with mandatory national provisions these initiatives can form the starting point for a transnational *lex consumentiae*.<sup>126</sup>

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<sup>122</sup> See [http://www.unece.org/cefact/recommendations/rec31/rec31\\_ecetrd257e.pdf](http://www.unece.org/cefact/recommendations/rec31/rec31_ecetrd257e.pdf).

<sup>123</sup> See [http://www.iccwbo.org/home/statements\\_rules/rules/1998/internet\\_guidelines.asp](http://www.iccwbo.org/home/statements_rules/rules/1998/internet_guidelines.asp).

<sup>124</sup> See [http://www.fedma.org/img/db/Code\\_of\\_Conduct\\_for-e-commerce.pdf](http://www.fedma.org/img/db/Code_of_Conduct_for-e-commerce.pdf).

<sup>125</sup> See e.g. the 1999 OECD “Guidelines for Consumer Protection in the Context of Electronic Commerce”, [http://www.oecd.org/document/51/0,2340,en\\_2649\\_34267\\_1824435\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/51/0,2340,en_2649_34267_1824435_1_1_1_1,00.html), used by most member countries; the 1999 Canadian Working Group on E-Commerce and Consumers “Principles of Consumer Protection for Electronic Commerce, A Canadian Framework”, <http://strategis.ic.gc.ca/SSG/ca01182e.html>, and the 2003 “Code of Practice for Consumer Protection in Electronic Commerce”, <http://cmcweb.ca/epic/internet/incmc-cmc.nsf/en/fe00064e.html>; the 2000 “Building Consumer Sovereignty in Electronic Commerce: A Best Practice Model for Business” of the Australian Department of Treasury, <http://www.ecommerce.treasury.gov.au/html/build.htm>; the 2000 “New Zealand Model Code for Consumer Protection in Electronic Commerce”, <http://www.consumeraffairs.govt.nz/policyresearch/discussionpapers/model-code.html>; the 1999 Global Business Dialogue on e-Commerce (GBDe) recommendations on “Consumer Confidence”, <http://www.gbde.org/pdf/recommendations/consconf99.pdf>, and the 2000 “Summary of Recommendations on Consumer Confidence”, <http://www.gbde.org/nn/2000/confidence.doc>; the 1999 Transatlantic Consumer Dialogue (TACD) “Core Consumer Protection Principles in Electronic Commerce”, [www.tacd.org](http://www.tacd.org)> Documents>Internet>PolicyStatements.

<sup>126</sup> See *infra* 2(III).

### 3.1.7 Role of Multinational e-Businesses and International Law Firms

Multinational businesses and international law firms have played a considerable role in the shaping of the *lex mercatoria*.<sup>127</sup> It follows that their influence on the development of the *lex informatica* is likely to be of equal, or even of greater significance. As mentioned,<sup>128</sup> the negotiation and drafting of e-commerce contracts by specialised lawyers is already identified as one of the sources of emerging e-business usages. The significance of their contribution will increase in parallel to the growth of cross-border e-business through the introduction of new contractual terms and clauses. On the other hand, multinational enterprises may influence their external legal environment through a gradual process that begins with influencing or even generating the commercial customs of the markets in which they operate; continues with converting that custom into standard contracts; and, culminates into convincing state courts and legislatures to sanction that custom, in the form of case law or statutory codification.<sup>129</sup> Evidently, this process will also be deployed in e-business, where similarly the contracts drafted by multinational e-businesses will gradually contribute to the shaping of *lex informatica*. Multinational e-businesses are able to affect the transnational regulatory framework through lobbying of governments and international organisations,<sup>130</sup> as well as through their participation in international business organisations. At first glance, it seems logical to assert that the influence of international lawyers and multinational enterprises will be similar in form and degree as the one exerted thus far on *lex mercatoria*. However, the fundamental characteristics of the internet, in particular the instantaneous and ubiquitous nature of international transactions, the technological infrastructure favouring those with better access to the latest technologies and, *a fortiori*, those who invent them, the relative absence of state influence on e-business at the international level, and the

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<sup>127</sup> See generally Dezalay and Garth, *supra* note 39. For the role of multinationals in particular see Muchlinski, P.T., “Global Bukowina Examined: Viewing the Multinational Enterprise as a Transnational Law-making Community”, in Teubner (ed), *supra* note 5, 79-108; On the role of lawyers in transnational rule-making see e.g. Perdomo, R.P., “Oil Lawyers and the Globalisation of the Venezuelan Oil Industry”, in Appelbaum *et al* (eds), *supra* note 5, 301-322, and Dezalay and Garth, *supra* note 39, 100 *et seq.*, in relation to the global oil market; Flood J., Skordaki E., “Normative Bricolage: Informal Rule-making by Accountants and Lawyers in Mega-insolvencies”, in Teubner (ed), *supra* note 5, 109-131, demonstrating how a global community of professionals creates local solutions in an “insolvency world” with its own *lex mercatoria*; and Arthurs, H., “The Role of Global Law Firms in Constructing or Obstructing a Transitional Regime of Labour Law”, in Appelbaum *et al* (eds), *supra* note 5, 273-299 regarding labour law.

<sup>128</sup> *Supra* 2(I)(iv).

<sup>129</sup> Muchlinski, *supra* note 127, 80.

<sup>130</sup> *Ibid.*

fundamentally different global political and economical circumstances of the present time, substantiate the estimate that the influence exerted by international lawyers and multinational enterprises on the shaping of transnational substantive rules of e-business can be more extensive. In order to ascertain the degree of that influence, specific and systematic empirical research needs to be undertaken.

### 3.1.8 Role of Online Tribunals and Arbitral Case Law

The role of online tribunals and the case law they will develop is of paramount importance in the emergence of the *lex informatica*. The very reason for the creation of the *lex informatica* is its application by arbitral tribunals. At the same time, tribunals contribute to the further development of *lex informatica* through applying it and rendering awards based on transnational principles and usages. Further, such awards define or clarify transnational rules and usages. Online arbitrations are handled by several providers,<sup>131</sup> certain of which have made available the numbers of the arbitrations they have handled.<sup>132</sup> However, no awards have been published. The absence of published awards does not permit any comments or conclusions regarding the application of *lex informatica* by online tribunals.<sup>133</sup> As noted, precedent may be of little significance in online arbitration of e-business disputes.<sup>134</sup> Nevertheless, the publication of awards will raise awareness, increase predictability and will facilitate the development of *lex informatica*, its acceptance by the e-business community, and its application by online arbitrators. Therefore a solution that permits the publication of e-business awards while preserving the confidentiality of the arbitration is of the essence. In addition, sustained empirical research is required in order to collect

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<sup>131</sup> See e.g. <http://www.arbitrators.org/>; <http://www.aryme.com/>; <http://www.cibertribunalperuano.org/>; <http://www.consensusmediation.co.uk/>; <http://www.disputemanager.com/>; <http://www.resolvemydispute.com/>; <http://www.electroniccourthouse.com/>; <http://www.onlineresolution.com/>; <http://www.privatejudge.com/>; <http://www.squaretrade.com/>; <http://www.vmag.org/>; <http://www.webassured.com/>; <http://www.webmediate.com/>.

<sup>132</sup> For instance, in 2005, the President and CEO of the American Arbitration Association (AAA) heralded the death of distance by the advent of Online Dispute Resolution (ODR) and reported that in less than three years over three thousand B2B domestic and international, arbitration and mediation cases had been filed online with the AAA; in 2004, the AAA accepted thirty eight international arbitrations and estimated fifty four for 2005; current cases in October 2005 included a fifty million dollars online mediation and a thirty million dollars online arbitration; see Slate, W.K., presentation at the Japan Commercial Arbitration Association Seminar on "The Current Issues and the Future of International Commercial Arbitrations in Eastern Asia", Tokyo, 25 October 2005 (the report of the seminar is on file with the author). Further, in 2004 the CIArb was reported to have rendered 400 online arbitration awards through its various schemes, see Kaufmann-Kohler and Schultz, *supra* note 55, 34.

<sup>133</sup> See however the application of general principles of law in CIArb online arbitration, *infra* 2.(III).

<sup>134</sup> *Supra* 2(I).

reliable data on the practice of arbitration of e-business disputes with particular focus on the application of *lex informatica*.

#### 4. Content of Transnational Rules and Usages of e-Business

The identification of the precise content of transnational substantive rules of e-business law and e-business usages and the creeping codification of *lex informatica* are tasks of considerable magnitude. They necessitate extensive comparative study of the sources of *lex informatica* and empirical research into the actual current practice of the various sectors of cross-border e-business and of online tribunals. Therefore, the determination of the content of transnational rules and the compilation of a list of *lex informatica* principles upon which its creeping codification will be based are identified as being among the issues calling for further research.<sup>135</sup> Here, we only carry out a *prima facie* examination in order to demonstrate that the content of certain fundamental principles and rules is already identifiable. The product of the combination of such emerging *lex informatica* rules with established rules of *lex mercatoria* indicates the feasibility of a transnational substantive framework for e-business. Therefore, the end-result of a more comprehensive in this regard project will be of great usefulness in the development of e-business and pertinent online arbitration. The determination of *lex informatica* principles and rules is a two-fold task. Firstly, the transnational rules specific to e-business need to be identified. Secondly, the exact meaning that certain general principles of law and rules of *lex mercatoria* assume when transposed to e-business needs to be clarified.

In relation to the second limb, certain general principles of law such as good faith and fair dealing may assume a specific meaning in the context of e-business.<sup>136</sup> The clarification of the exact meaning of the principle and the consequences it may impose on the parties depends not only on the particular circumstances of the case, but also on the state of the art of e-business. This postulate is evidenced by established practice in international trade. For instance, in order to construe the good faith and fair dealing in the meaning of the UNIDROIT Principles, the special conditions of each

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<sup>135</sup> *Infra* 2(VI).

<sup>136</sup> Similarly, Vahrenwald, *supra* note 4, 168, in the context of his examination of the suitability of the UNIDROIT Principles for e-commerce in the EU internal market.

particular sector of international trade must be taken into account.<sup>137</sup> From this it can be inferred that in our context the special conditions of individual e-business sectors will need to be taken into account. At any given point in time, the exact content of such principles and rules will be dependent not only on the specificities of the particular case, but also on the state of the art, in business and technological terms, of the particular sector of e-business. Further, existing *lex mercatoria* rules may also assume a specific meaning in the context of e-business. For instance rules on contract formation and agency may be affected by the introduction of electronic agents.<sup>138</sup> However, specific *lex informatica* rules may emerge on these issues on the basis of the e-Contracting Convention<sup>139</sup> and other initiatives.

Regarding the determination of *lex informatica* rules that stem directly from the practice of e-business, arguably certain *lex informatica* principles and rules have already emerged. For instance, the fundamental principle of functional equivalence of documents<sup>140</sup> and signatures<sup>141</sup> is reflected in several e-business instruments and its fundamental importance is widely recognised in business and legal circles. Similarly, the principle of technological/medium neutrality is reflected in various instruments and enjoys wide consensus.<sup>142</sup> Moreover, as the discussion in the previous subsection demonstrated, transnational rules seem to be shaping in areas such as conduct of parties relying on electronic signatures, contract formation, use of automated systems for contract formation, availability of contract terms, error in electronic communications, dispatch and receipt of e-communications, authentication and attribution of messages.<sup>143</sup>

Further, e-business usages, practice and even custom are emerging. For instance, it seems rational to suggest that e-business custom indicates the obligation of professional parties to use state of the art security technology as a means of protecting the confidentiality and integrity of their transactions. Another justifiable customary rule of e-business could be that there exists a presumption of IT competence of

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<sup>137</sup> Commentary on the UNIDROIT Principles 1994, 17, <http://www.unidroit.org/english/principles/contracts/principles1994/fulltext.pdf>.

<sup>138</sup> For which see generally Reed, *supra* note 23, 210-212.

<sup>139</sup> See e.g. article 12 on use of automated message systems for contract formation.

<sup>140</sup> See *supra* note 87, and accompanying text.

<sup>141</sup> See *supra* note 88, and accompanying text.

<sup>142</sup> See *supra* note 89, and accompanying text.

<sup>143</sup> As evidenced particularly by the UNCITRAL Model Laws and e-Contracting Convention, and the ICC eTerms 2004 and GUIDEC II, see *supra* 2(I)(ii) and 2(I)(v).

professional parties engaging in e-business encompassing possession of the necessary skills and equipment; therefore the parties may not invoke lack of competence in order to justify, e.g. security breaches or incapacity to perform a contractual obligation. Sustained and comprehensive research in the practice of e-business is likely to identify more e-business usages. Further the expansion of e-business is likely to result in the development of custom including further formulating initiatives.

Whereas the fundamental principles are likely to remain the same in the foreseeable future, more specific rules are likely to be produced, more usages are likely to develop and e-business custom will be shaped. The combination of the established rules and principles of the *lex mercatoria* and the existing fundamental *lex informatica* principles, emerging rules and identifiable practices, usages or even custom of e-business produces an embryonic transnational substantive framework capable of accommodating most of the issues that may emerge in international e-business transactions. Therefore, the articulation of a body of transnational rules for cross-border e-business is not only desirable, but also feasible. The missing element is comprehensive and ongoing research in order to clarify the exact content of the existing transnational principles, rules, custom and usage of e-business, and to monitor the constant development of the *lex informatica*.

## **5. Sector Specific Scope of Transnational Rules and Usages of E-business**

Given the already observable diversity in international e-business it is likely that sector-specific transnational rules will emerge from the practice of participants in individual e-business sectors. Whereas fundamental *lex informatica* principles such as functional equivalence are applicable to all aspects of e-business, sector specific rules and usages may emerge from specific practices adopted in various sectors, such as e-commerce, online banking, and intellectual property in e-business.

For instance, a fundamental source of differentiation in the context of e-commerce transactions is whether a transaction is concluded between businesses or whether a consumer is involved. The participation of an unsophisticated consumer in an international commercial transaction raises issues of consumer protection not applicable to B2B transactions. Therefore, the massive participation of consumers in

cross-border e-commerce transactions may lead in due course to the emergence of transnational rules of law and usages applicable to consumer transactions, a *lex consummentiae internationalis*. The emergence of transnational rules for consumer disputes is more complicated, given the public policy character of consumer protection and the diverse approaches adopted by individual jurisdictions. It also presupposes the wide recognition of the arbitrability of consumer disputes and the validity and conscionability of B2C online agreements to arbitrate.<sup>144</sup> Suffice here to be noted that hostility towards consumer arbitration appears to be increasingly retreating. Furthermore, the sources of such a *lex* have emerged from a number of public and private, national, regional and international initiatives.<sup>145</sup>

Furthermore, the possibility of a transnational approach to the rules of law applicable in the resolution of international consumer e-commerce disputes appears to be acceptable by international consumer protection stakeholders. For instance the New York Recommendations 2003 of the Global Business Dialogue on Electronic Commerce (GBDe)<sup>146</sup> incorporate an agreement reached between GBDe and Consumers International (CI) on Alternative Dispute Resolution Guidelines applicable to international B2C e-commerce.<sup>147</sup> The term Alternative Dispute Resolution is used widely in order to include arbitration.<sup>148</sup> The Guidelines state that one of the advantages of ADR is that as opposed to the difficult, cumbersome and costly research on detailed legal rules applicable in court procedures

*ADR dispute resolution officers may decide in equity and/or on the basis of codes of conduct. This flexibility as regards the grounds for ADR decisions provides an*

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<sup>144</sup> See Kaufmann-Kohler and Schultz, *supra* note 55, 169-181, examining the position in the US, the EU and several European national jurisdictions in order to confirm the suitability of online arbitration for B2C e-commerce disputes.

<sup>145</sup> See e.g. those cited in *supra* note 125.

<sup>146</sup> [http://www.gbde.org/pdf/recommendations/NYC\\_Recommendations.pdf](http://www.gbde.org/pdf/recommendations/NYC_Recommendations.pdf).

<sup>147</sup> *Ibid*, 54.

<sup>148</sup> *Ibid*, 55. It should be noted, however, that the Guidelines advise against the general use of arbitration that is binding for the consumer on the ground that binding arbitration may be detrimental for consumer confidence, *ibid*, 57. Nevertheless, the Guidelines recognise that binding arbitration may be appropriate in particular circumstances, and condition its use by stating that in such cases arbitration must meet the criteria of impartiality, transparency and public accountability and that the conclusion of a consumer arbitration agreement must be fully informed, voluntary and made only after the dispute has arisen.

*opportunity for the development of high standards of consumer protection worldwide.*<sup>149</sup>

Finally, actual B2C online arbitration practice offers examples of such an approach: in the FordJourney consumer online arbitration scheme of the CIArb online arbitrators apply general principles of law.<sup>150</sup>

An example of a transnational rule that is subject to differentiation depending on the participation of a consumer is the incorporation of contractual terms including arbitration agreements by reference. In consumer contracts the terms incorporated by reference should be available to the adhering consumer at the conclusion of the contract, which may not be required when the contract is concluded between sophisticated businesspeople, who may be presumed to know such terms.<sup>151</sup> Further the application of certain rules of *lex mercatoria* may be affected, e.g. the Presumption of Professional Competence of the Parties<sup>152</sup>, is obviously not applicable to consumer contracts.

Furthermore, the growing practice of internet banking and finance involving particular issues such as e-money is also likely to give rise to specific transnational rules, for instance a necessity for specific security measures. Non-contractual aspects of online economic activity may also give rise to specific rules. A good example is the field of e-business related intellectual property rights. This is particularly evident in relation to domain name disputes. Although doubts can and have been expressed as to whether the UDRP is part or source of *lex informatica*,<sup>153</sup> in any case the policy itself and the relevant decisions rendered by dispute resolution panels provide an indication of the wide acceptance by the international e-business community of rules not drawn from a given national jurisdiction on the lawful registration and use of domain names. Therefore, irrespective of whether the UDRP is conceived as part and source of *lex informatica*, the policy itself and the decisions applying it can at the very least be used by arbitrators as one of the benchmarks for the wide acceptance of rules regarding the

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<sup>149</sup> *Ibid*, 59.

<sup>150</sup> See interview with Gregory Hunt, Manager of the Dispute Resolution Services of the CIArb in Kaufmann-Kohler and Schultz, *supra* note 55, Annex IV.2, 300.

<sup>151</sup> See Patrikios, *supra* note 29, chapter 2.2.2.(II).

<sup>152</sup> CENTRAL Principle No. I.9.

<sup>153</sup> See *supra* 2(I)(ii).

registration of domain names. Finally, other non-contractual aspects of online activity such as privacy or defamation may also give rise to specific transnational rules.<sup>154</sup>

Thus, diversity in e-business is likely to give rise to sector-specific transnational rules and usages. Therefore, the conceptualisation of *lex informatica* as an expansive concept encompassing transnational rules and usages emerging in all sectors of e-business is justified.

## 6. Method of *Lex Informatica*

The functional three step method employed by international arbitrators for the application of *lex mercatoria* rules is transposable to the application of *lex informatica* to e-business disputes. The functional method approach conceptualises *lex mercatoria* as a functional and dynamic method involving the identification of particular rules of *lex mercatoria* on a case-by-case basis, when a specific issue arises.<sup>155</sup> Being a functional comparative method it cannot and should not be restricted to a list. However, lists facilitate the application of transnational rules and are therefore commendable.<sup>156</sup> The main benefit of the functional method is that any claim made by a party in a particular case will find an answer, which is not necessarily the case under the list method.<sup>157</sup> A further advantage is that the functional approach avoids the possibility of conflicts between various lists.<sup>158</sup> The method of *lex mercatoria* consists of the application of transnational rules by arbitrators not mechanically but dynamically, sometimes even creatively,<sup>159</sup> following a three-step method based on the identification of the intent of the parties and a justification of the applicable rule

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<sup>154</sup> For an early description of a transnational approach to cyber-tort see e.g. Mefford, *supra* note 4, section IV.

<sup>155</sup> See Gaillard, *Transnational Law*, *supra* note 5; Gaillard, *Thirty Years of Lex Mercatoria*, *supra* note 5; Gaillard and Savage, *supra* note 6, 1456 *et seq.* Lando, *Law Applicable to the Merits in Sarcevic* (ed), *supra* note 5, 143, refers to a “...judicial process, which is partly an application of legal rules and partly a selective and creative process...”; he describes that process at 147 *et seq.*

<sup>156</sup> *Ibid*, section 1(b). In this regard see critical comments of Berger, *Creeping Codification*, *supra* note 5, 218 *et seq.*, who also acknowledges the complementary function of the two methods.

<sup>157</sup> *Ibid*, section I(b).

<sup>158</sup> For the possibility of such a conflict between the UNIDROIT Principles, the Lando Principles on European Contract Law and the CENTRAL List of Principles on e.g. the “hardship” rule, see *ibid*, section I(b); the conflict remains after the new edition of UNIDROIT Principles in 2004 and the amendment of the hardship rule of the CENTRAL Principles in 2003 that takes into account the ICC Force Majeure Clause 2003/Hardship Clause 2003 (ICC Publication No. 650). Further, as noted the earlier efforts of Lando and Mustill to compile lists reached differing conclusions, see *supra* note 33.

<sup>159</sup> Lando, *Law Applicable to the Merits in Sarcevic* (ed), *supra* note 5, 143 and 147 *et seq.*

on the basis of its wide acceptance pursuant to comparative law analysis, without it being necessary for the rule to enjoy universal acceptance.<sup>160</sup> This approach rejects the traditional opposition between national legal systems and the *lex mercatoria* as a transnational legal order as a non-issue, since there exists a complementary function given that transnational rules are rooted in national systems.<sup>161</sup> It is argued, however, that if not a genuine legal order, transnational rules perform in arbitral practice a function strikingly similar to that of a genuine legal order. Therefore occasionally, the application of transnational rules by arbitrators could be justified even when the relevant arbitration rules or law require that in the absence of party choice arbitrators should apply a “law” as opposed to “rules of law”.<sup>162</sup> Arguably, the functional method serves better the needs of the international community in the current context of globalisation.<sup>163</sup> It is therefore transposable to e-business.

The rapid evolution of technology and business practices that characterises e-business necessitates the innocuous precaution that online arbitrators pay particular consideration to the current state of the art of e-business. The rapid evolution of e-business may particularly affect three instances of the functional method of application of the *lex informatica*: firstly, the determination of e-business custom and usages may be complicated.<sup>164</sup> Secondly, in the context of comparative analysis employed for the determination of the wide acceptance of a given rule, given the cumbersome nature of legislative processes, the most recent and probably better adapted to the current state of the art and, therefore, most appropriate rule may not necessarily enjoy wide acceptance in comparative law.<sup>165</sup> Thirdly, in seeking guidance from pertinent case law it should be borne in mind that a precedent may be incompatible with the current state of the art.<sup>166</sup>

Therefore, in applying the functional method of determination of applicable transnational rules to e-business disputes arbitrators should pay appropriate attention

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<sup>160</sup> Gaillard, *Transnational Law*, *supra* note 5, section I(b); Gaillard and Savage, *supra* note 6, 1456 *et seq.*

<sup>161</sup> *Ibid.*, section I(a); Gaillard, *Thirty Years of Lex Mercatoria*, *supra* note 5, 211. For the inclusion of national instruments in the sources of *lex informatica* see *supra* 2(I)(iii).

<sup>162</sup> *Ibid.*, section V *fine*. For examples of such diversification between arbitration laws and rules see *supra* note 36.

<sup>163</sup> De Ly, *Lex Mercatoria: Globalisation and Self Regulation*, *supra* note 5, 180.

<sup>164</sup> See *supra* 2(I)(iv).

<sup>165</sup> See *supra* 2(I)(iii).

<sup>166</sup> See *supra* 2(I).

to the rapid evolution of the state of the art in e-business. This precaution does not affect in any way the characteristic properties of the method. Online arbitrators will identify the intention of the parties; will examine the wide acceptance of the selected rules on the basis of comparative law analysis, in the context of which the unanimous acceptance of a rule is not necessary; will take into account the state of the art in the particular e-business sector and will ensure that the suitability of the pertinent rule is not only supported by wide acceptance in comparative law, but also reflects the contemporary practices and usages of the sector. Where the two criteria point to different solutions, preference should be given to the rule supported by the state of the art as reflecting the current usage. This should also be the solution in cases where various *lex informatica* sources adopt solutions that differ considerably. As opposed to the list approach, the dynamic or even creative application of *lex informatica* rules pursuant to the functional method approach ensures that any claim made by a party in a particular case will find an answer, and that any gaps in the body of *lex informatica* rules can be filled in.

## 7. Enforceability of Decisions Based on the *Lex Informatica*

The wide recognition of the enforceability of awards based on the *lex mercatoria*<sup>167</sup> is undisputedly confirmed by the 1992 Cairo Resolution of the International Law Association,<sup>168</sup> national court decisions<sup>169</sup> and scholarly writings.<sup>170</sup> This fact confirms the enforceability of awards based on the *lex informatica*. There exists no reason why there should be any differentiation between the enforceability of awards

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<sup>167</sup> See e.g. arbitral case law cited by Lew, *supra* note 5, 366-372 and 456-474; Lew *et al*, *supra* note 10, 18-41; Berger, New Law Merchant and Global Market Place, *supra* note 5; Dasser F., "Lex Mercatoria-Critical Comments on a Tricky Topic", in Appelbaum *et al* (eds), *supra* note 5, 189-200; Brunetti, M., "The Lex Mercatoria in Practice: The Experience of the Iran-US Claims Tribunal", 18(4) *Arb Int'l* 355 (2002); Paulsson, La Lex Mercatoria dans l'Arbitrage CCI, *supra* note 5; Lando, Law Applicable to the Merits in Sarcevic (ed), *supra* note 5.

<sup>168</sup> Providing that arbitration awards based on transnational rules are enforceable if they have been applied by arbitrators pursuant to agreement of the parties or when the parties have remained silent regarding the applicable law, see Gaillard (ed), *Transnational Rules in International Commercial Arbitration*, *supra* note 5.

<sup>169</sup> See e.g. cases cited by Rivkin, *supra* note 5; Lynch, K., *The Forces of Economic Globalization: Challenges to the Regime of International Commercial Arbitration*, Kluwer Law International, The Hague/London/New York, 2003, 326; Lew *et al*, *supra* note 10, 18-51.

<sup>170</sup> See e.g. Rivkin, *supra* note 5; Lando, Law Applicable to the Merits in Sarcevic (ed), *supra* note 5, 154; Redfern, A., Hunter, M., *Law and Practice of International Commercial Arbitration*, 4<sup>th</sup> Edition, Sweet & Maxwell, London, 2004, 2-64; Dasser, *supra* note 167, 197, accepts the enforceability of such awards even though he takes a critical approach to *lex mercatoria* submitting that it is largely irrelevant for businesspeople and their lawyers, at 199.

based on *lex mercatoria* and awards based on *lex informatica*. Therefore the enforceability of such awards is undisputable.

## 8. Further Research

This paper demonstrated the necessity, feasibility and emergence of a transnational body of rules and usages that forms the basis for the determination of the rights and obligations of parties to cross-border e-business contracts and for the resolution of pertinent disputes by arbitration. It was acknowledged, however, that at present only a theoretical conceptualisation and description of *lex informatica* can be offered. The determination of the salient ontological features of *lex informatica* is therefore an issue calling for extensive comparative and empirical research. Such research will contribute to the establishment of *lex informatica* by clarifying first and foremost the willingness of the e-business community to adopt the resolution of disputes by online tribunals on the basis of the *lex informatica*; although the e-business community is likely to adopt ODR and online arbitration as the dispute resolution methods of choice<sup>171</sup>, it is not clear whether it will similarly adopt the *lex informatica*: IT lawyers may be sceptical about entrusting online arbitrators with a dynamic, or even creative, application of substantive rules. Further, research should focus on the development of e-business custom; the content and scope of *lex informatica* rules and the possibility of emergence of a *lex consumentiae internationalis*; the meaning assumed by *lex mercatoria* principles and rules when they are transposed to e-business; the possibility of an emerging substantive transnational public policy specific to e-business, its contents and its impact on the determination of the applicable rules of law by parties and arbitrators; the actual application of the above elements of *lex informatica* by arbitral tribunals. On the basis of the conclusions of research on the above issues a list of rules and principles can be compiled in order to form the basis for the creeping codification of *lex informatica* along the lines, or perhaps in the context, of the creeping codification of *lex mercatoria*. Finally, the role of international lawyers and of multinational enterprises in the shaping of *lex informatica* should be examined thoroughly.

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<sup>171</sup> For reasons permitting this estimate including arguments stemming from the situation in offline international business and the impressive number of disputes resolved by ODR in just a few years see Patrikios, *supra* note 29, chapter 6.3.(I).

## 9. Concluding Remarks

This paper examined the issues pertaining to the rules of law applicable by online arbitrators to the substance of the e-dispute. It was acknowledged that parties and arbitrators may want to apply a national law to the substance of the e-dispute, in which case the difficulty of applying conflict of laws rules on internet transactions is a further incentive for the direct determination of the applicable law. However, it was submitted that a transnational rules approach is better suited to the specific characteristics of cross-border e-business transactions.

In relation to its theoretical conceptualisation, the *lex informatica* was defined as the body of transnational rules of law and trade usages applicable to cross-border e-business transactions, created by and for the participants in cross-border e-business and applied by arbitrators to settle disputes on the basis of the intention of the parties and of functional comparative law analysis taking into account the rapid evolution in the state of the art of e-business. The view was taken that *lex informatica* should be conceptualised as a functional and dynamic method of decision making, as opposed to a list of rules. *Lex informatica* is defined by its sources. It is an expansive concept encompassing all aspects of e-business. The justification of the necessity for the *lex informatica* is based on both general grounds stemming from international trade considerations and on grounds specific to the salient features of e-business. In particular, the development of *lex informatica* is crucial to the formation of a transnational co-regulatory framework for cross-border e-business based on online arbitration. The legitimacy of *lex informatica* is undisputable and, arguably, the application of transnational rules of law and trade usages to the substance of e-disputes is at present a more representative and “legitimate” solution than the exportation of any national law. Scepticism towards *lex informatica* might stem from traditional objections to the *lex mercatoria* as well as from specific issues related to e-business. Convincing answers can be provided in either case, and it seems that there exist no insurmountable obstacles to the development of *lex informatica*. It is already emerging and its establishment is subject only to the adoption of its principles and rules by e-businesspeople and to the willingness of online arbitrators to apply them.

With regard to the ontology of *lex informatica*, several sources are identifiable at present, including general principles of law and *lex mercatoria* principles,

international initiatives, national instruments, e-business usages and emerging custom, standard contracts and agreements, guidelines and codes of conduct. The relative scarcity of sources as opposed to the sources of *lex mercatoria*, concerning in particular pertinent arbitration awards, will be remedied in the course of further development of e-business. From the existing sources of *lex informatica* certain fundamental transnational principles of e-business law such as functional equivalence and medium neutrality have already emerged. More specific rules are emerging for aspects of e-business such as time and place of dispatch and receipt of data messages, use of automated systems for contract formation, availability of contract terms, and error in electronic communications. In principle, *lex informatica* rules may assume specific meanings depending on the sector of e-business from which they emerge and to which they apply, given that particular issues may arise in each of the sectors of e-business. The existing principles and emerging rules of *lex informatica* can be supplemented by established general principles of law and other principles and rules enshrined in the *lex mercatoria*, so as to constitute a basic transnational substantive framework, which should suffice for the regulation of most substantive aspects likely to emerge from cross-border e-business transactions. The rapid development of cross-border e-business allows the optimism that in due course a fully-fledged transnational framework will be articulated.

However, the establishment of the willingness of the e-business community to adopt the *lex informatica*, and the determination of the content and meaning of the emerging principles and rules, can only be accommodated by extensive comparative and empirical research. Such research will define the content of *lex informatica* principles and rules through a comparative examination of the various sources, through empirical research into the practices adopted in the various sectors of e-business and in particular into the emergence of e-custom, and through the monitoring of the handling of cross-border e-business disputes by arbitral tribunals. The conclusions of such sustained research could be used for the compilation of an open-ended list of principles and rules that can form the basis for the creeping codification of *lex informatica*. Finally, the role of multinational enterprises and international law firms in the formation of transnational rules of law and custom of e-business should be the subject of scrupulous study.

The application of the *lex informatica* to the substance of e-disputes does not raise enforceability concerns for the resulting award. A more challenging and interesting question in this regard is whether transnational rules of law can also be applied in order to uphold the arbitration agreement and to govern the arbitration procedure. Unlike the application of transnational rules of law to the substance of disputes, in relation to which there is normally no control by state courts, the application of transnational standards to the arbitration agreement and procedure is restricted by the control exercised by state courts in the various instances that their support may be needed before, during, or after the arbitration. The application of transnational legal standards not only to the merits, but also to the agreement and procedure, would constitute the pinnacle of autonomous and delocalised or denationalised arbitration. The author's PhD research answers this question with a qualified "yes". This, however, should be the subject of another paper.