Expert Opinion on Standards in Global Financial Markets

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Abstract

This paper reports the outcome of a small scale 'Delphi' survey of standards professionals, focussing on the business and economic benefits of standardization in global financial markets and the barriers to standardization. Despite its small scale this survey points to clear conclusions. There are wide ranging and substantial perceived benefits of standardization, but achievement of these benefits has been held back by fragmentation of standards, failures of co-ordination and failure to overcome short-term vested interests. Underlying causes for this lack of standardization are inadequate pan-industry institutional arrangements and lack of resources for developing and promoting standards. Effectively addressing these underlying causes may regulators to play a leading role, working together with industry to to develop more effective institutional arrangements for standardization that will operate in the interests of both business and policy makers.

Key words: co-ordination failure, data standards, financial messaging standards, FIX Protocol, FpML, ISDA, standardization, standards institutions, Swift, XML, ISO20022,

JEL numbers: G18, G20, L8, L15

1. Introduction

1.1 Objectives and scope

This paper is an output of a UK Government Office for Science sponsored project on standards and standardization in global financial markets. The first report from this project (Houstoun, Milne, & Parboteeah, 2014) assessed the current state of standards in global financial markets, using information in the public domain (both academic and practitioner based) together with a small number of one to one interviews.

This paper documents the outcome of an initial effort at investigating the range of views and extent of consensus amongst market professionals working with standards in global financial markets. The survey focuses on the business and economic benefits available from greater standardization in financial markets and the barriers that prevent these benefits being achieved.

It uses the so called 'Delphi method', a well established research methodology that uses iteration – a repeated survey questions with each round of questions based on the earlier responses – in order to correct for researcher and other biases and to explore the degree of consensus amongst survey respondents.

Limits on resourcing meant that the survey had to be completed in only two rounds: an initial "information seeking" round followed by one further iteration to gauge the level of agreement on a range of statements and views suggested by the first round. The number of practitioners invited to participate in the survey was relatively small. They were the 73 members of the working group set up for the Loughborough project on standards in global financial markets (see http://www.financialstandards.lboro.ac.uk/). Membership of this working group was based on personal recommendations amongst key contacts in the industry. Only 15 respondents fully completed each iteration of the survey. We cannot therefore claim that this is a statistically valid sample representing all of those involved in setting of standards in global financial markets.

Still, despite its small scale, this survey offers useful insights into how these market participants view both standards and the standard setting process in financial markets. The views reported in this survey are to a large extent consistent with the conclusion of our first report that institutions for standard setting in financial markets are relatively undeveloped compared with other industries (though we acknowledge that the process of invitation to our working groups involved a degree of bias towards those who would like to see more focus on standardization in financial services). These responses also document: a range of strongly held and sometimes quite passionate opinions. These include a perception at least amongst some practitioners that narrow self- interests often trump the broader benefits to customers and industry and so block desirable standardizations; and that the development and maintenance of standards in financial markets is insufficiently resourced.

While this survey is only a pilot, illustrating the kind of insight on standard setting in financial markets that can be obtained through survey based research, it provides clear support for the findings of the first report from this project that improved institutional arrangements are needed to promote standardization in global financial markets with sufficient resourcing and support from both senior regulators and senior management across industry.

The remainder of this paper is structured as follows. Section 2 explains the Delphi methodology and discusses our decisions about how to use this approach to document the views of practitioners on standard setting in financial markets. Section 3 presents the results from the two rounds of the Delphi process. Section 4 offers a concluding discussion. Two appendices contain the survey questions from the first and second rounds respectively.

2. Survey Design

2.1 Delphi methodology

The Delphi methodology was developed at the RAND Corporation in the 1950's as a technique to apply expert input in a systematic manner using a series of questionnaires with controlled feedback (Linstone & Turoff, 2002). Its main benefits are obtaining the advantages of an interacting group, but without counterproductive group dynamics (Kauko & Palmroos, 2014). Delphi studies are often used when the topic under study is complex, awkward to talk about or politically delicate. The key features of a Delphi study are anonymity, controlled feedback into the questioning processes and the aim of moving towards consensus (Diamond et al., 2014) (Linstone & Turoff, 2002).

The "holy grail" of any research is methodological rigour i.e. making the outcome as objective and free from bias as possible (Hasson & Keeney, 2011). The Delphi process provides an improvement over traditional interview techniques by helping improve reliability and repeatability of findings. The Delphi method grew out of the desire at the RAND Corporation to apply scientific credibility to the use of expert opinion (Landeta, 2006) and was developed alongside new, at the time, research on the advantage of group opinion over that of the individual. Following the declassification of the method in the 1960's RAND published the first non-military use of the Delphi method in economic planning in developing economies (Helmer & Quade, 1963). Following its declassification, Delphi was increasingly used for evaluating complex social problems/phenomena.

We apply what is sometimes called the classical Delphi, the originally defined Delphi process whereby the most reliable consensus of opinion of a group of experts is sought via a series of questionnaires interspersed with controlled feedback (Dalkey & Helmer, 1963). In the classical Delphi, the number of experts recommended is anywhere between three and 98 with expertise in the same field, but different backgrounds (Rowe & Wright, 1999). While we have been able to conduct only two rounds, it has traditionally been conducted with three or more rounds including an open qualitative first round (Hasson & Keeney, 2011). Some degree of consensus normally emerges and the classical Delphi is often halted after a predefined number of rounds or statistical measure for the topic under study.

This classical Delphi is not without its weaknesses, chief among which is its defining feature: the reliance on experts. Questions immediately arise on the definitions of an expert and how to identify and account for their biases (Linstone & Turoff, 2002). (Hussler, Muller, & Ronde, 2011) later argue that experts are affected, more so than laymen, by belief perseverance bias, meaning they are much less likely to change their original answers.

Despite these criticisms, the classical Delphi seems appropriate for the goals of this study, identifying the range of views and consensus amongst specialists working with standards in financial markets. The criticisms of the classical Delphi method are apposite when, for example, it is used to forecast market or economic developments (one obvious example of the failure of expert opinion was almost no financial or economic experts anticipated the global financial crisis of 2008). The classical Delphi is though appropriate when as here the goal is to summarise the views of experts about current issues and challenges within their own domain of expertise.

2.2 Demographics

The respondents to the Delphi survey were all professionals involved in standards (both transaction and data management) across a variety of firms. All 70 members of the working group were invited to complete the survey. For round 1, 29 members opened the survey and completed the first three demographic questions. However, only 15 members completed the whole survey, giving a response rate of 21%.

Table 1 Profile of respondents to both rounds of the survey

Role in Organisation	
Executive level	6
Standards	4
Consultant/Policy/Advisor	3
Other	2
Industry	
Standards Body (National and industry)	4
Consulting	3
Market Infrastructure	3
Government (inc. regulators)	2
Other (including university researchers)	3
Location	
Europe	11
North America	4

2.3 Conduct of the survey

Our Delphi survey was conducted in two rounds. In each round potential respondents (members of our working group) were sent a link to the survey questions set up using Bristol Online Surveys a survey tool used by over 300 organisations worldwide. The first round was open from 29th Aug 2014 until 17th Nov 2104. Completion of this first round took between 45 and 60 minutes, a substantial commitment for busy professionals, so we kept the survey open for two and half months to give us a chance to remind working group members to complete. The second round was a little easier to complete, requiring about 30 minutes, and was kept open from 14th January 2015 until 16th February 2015.

The questions asked in the first round are contained in Appendix 1 below. These first round questions ask for open-ended responses and are grouped in four main sections: Section 2: Standards and the Standardization Process; Section 3: The Current State of Standards in Financial Services; Section 4: Opportunities for Standards Development in Global Financial Markets; and Section 5: Coordination and Barriers to Standards in Global Financial Markets. In addition there was a first section asking for background information about the respondent and a concluding section offering an opportunity to provide any further comments.

The responses to the first round were then analysed and summarised in order to construct the second round questions, contained in Appendix 2 below. Most of these questions were designed to elicit indications of levels of agreement or levels of assessment of statements developed from the first round.

3. Results

This section summarises the survey responses under the four main section headings used in the first round of the survey. This summary though is not restricted to first round responses. Where appropriate it includes summary of response from the second round to get insight into the degree of consensus on various statements included in the second round.

3.1 Standards and the Standards Processes

What is a standard?

15 responses on the definition of a standard were received. We have used these responses to create a word cloud (Figure 1), indicating the frequency of words by increasing font size. This provides a visualisation of what financial markets experts on standards think are essential elements of a definition of a standard.

As can be seen in Figure 1, "commonly", "agreed" and "process" were the most common words appearing in the definitions, with all 15 respondents using both "common" and "agreed". For the shorter answers to the question, this was the scope of the response, with answers such as "a commonly agreed system of reference" typical. Longer answers became, perhaps expectedly, more technical and more finance focused, referencing for example "technical specifications" and "process specifications".

Figure 1 Definition of a Standard Word Cloud

One respondent (an operations director of a standards body) was entirely focused on the definition of standards in relation to messaging specifications. However more typical were answers similar to the following response received: "A process, product or service which evolves to become the de-facto way of carrying out a particular function whereby the different parties using it can gain from such benefits as business process efficiencies and cost savings". Overall, there was a large degree of consensus, albeit across two levels.

In our first report (Houstoun et al., 2014) we highlighted the definition of a standard as "An agreed way of doing things". Our survey results are largely consistent with this definition, but the highlighting of the word "process" indicates the extent to which standards in financial markets related to common or shared business processes, such as payments, the execution and settlement of trades, or the operational systems used for different business activities.

The benefits and disadvantages of standards
Round one of the survey asked respondents to list both the benefits of standards and the disadvantages of standards. The resulting responses are summarised in Figures 2 and 3 (we include only categories that attracted two or more endorsements from our fifteen respondents).

The most commonly cited benefits of standards were interoperability and cost reduction (Figure 2). Interoperability and cost reduction (or similar terms) both only received five mentions, with the other commonly cited benefits (encouraging risk reduction, supporting common language, promoting innovation and best business practice) scoring three or less mentions. Other benefits of standards mentioned in the first round but not attracting support in the second round included: optimising performance, easing regulation, improving market access and driving commoditisation.

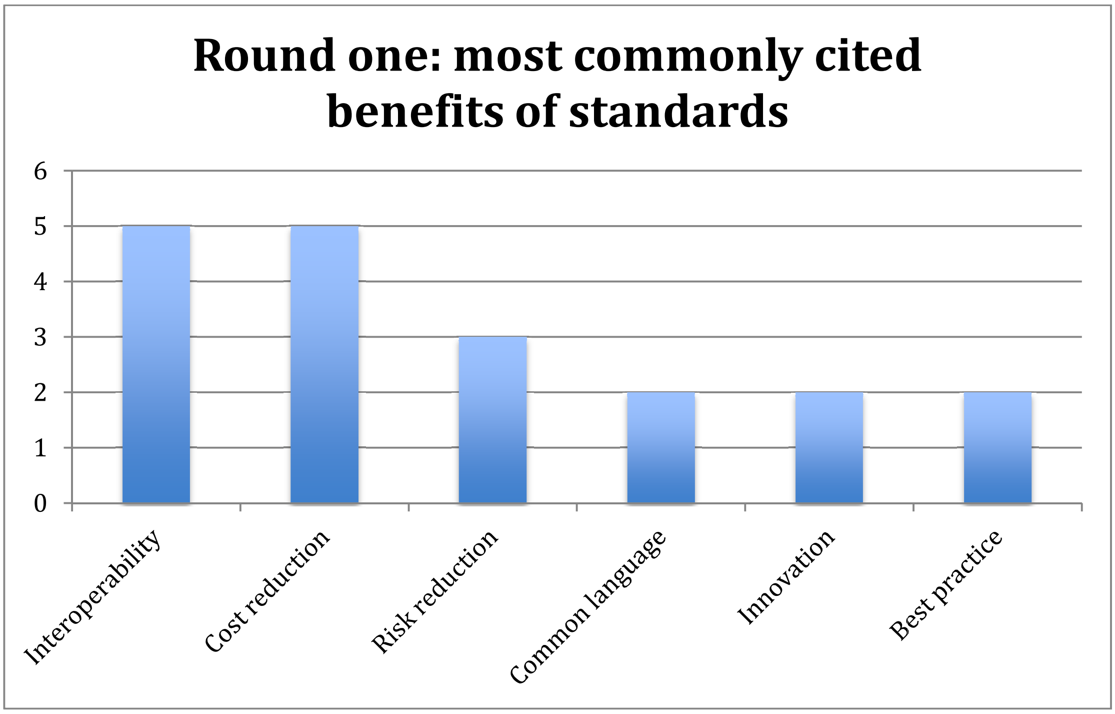

Figure 2 Benefits of Standards

Three disadvantages of standards were most frequently mentioned in round one (Figure 3). The most common disadvantage (inflexibility of standards) was mentioned by six out fifteen respondents, inhibiting of innovation by five and the costs of external governance by four. Interestingly, two respondents (chief technology officer of a standards body and a fintech consultant) argued that there are no real costs to standardization, only perceived costs.

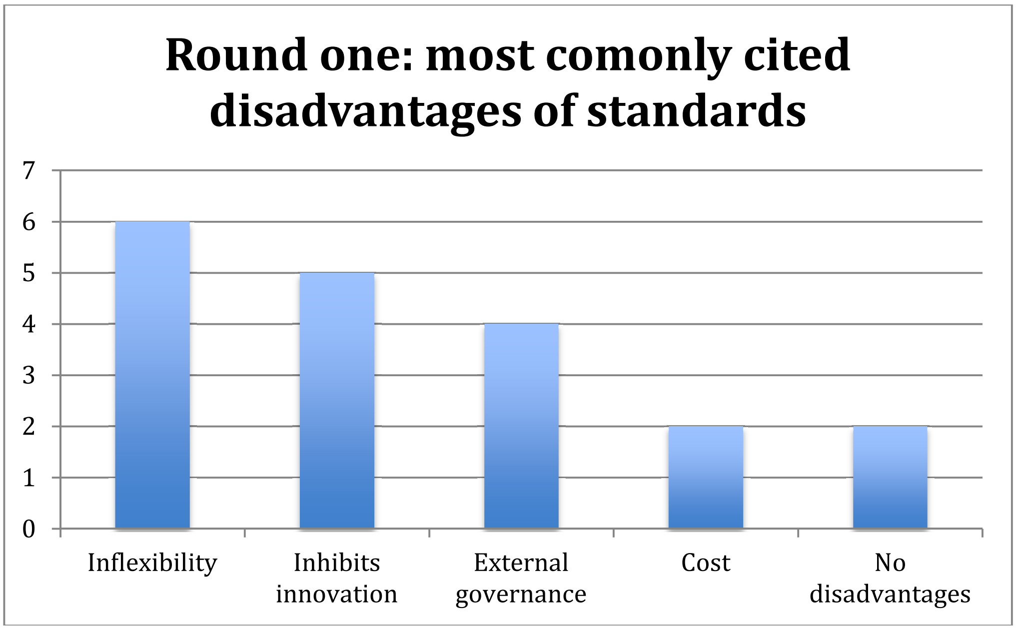

Figure 3 Disadvantages of Standards

There was a degree of ambiguity in this first round question about the disadvantages of standards. Most of our respondents interpreted this as asking about disadvantages arising from the particular standards used in financial markets and the way they are developed and maintained (not about disadvantages of standardization in general). This interpretation can explain the apparent contradiction between Figures 2 and 3, where innovation appears as a benefit of standards while inhibition of innovation as a disadvantage of standards. Universal and open standards in other industries – for example mobile telephony – are generally held to promote innovation, but fragmentation of standards or restricted access to standards can hinder innovation.[1]

Round two of the Delphi survey revealed fuller pictures of both the benefits and disadvantages of standards, compared to those obtained from round one. A greater degree of consensus was established for a number of benefits. These included three from the Figure 2 summary of round one, namely interoperability (80% strongly agree), cost reduction (90% strongly agree) and risk reduction (64% strongly agree). They also included three further benefits that were only mentioned by one round one respondents (and hence not included in Figure 2): an increase in automation (70% strongly agree), easing the impact of regulation (80% strongly agree) and improving community learning (67% strongly agree). A notable further finding that 45% of respondents strongly believed standards and standardization would *not* help reduce the resilience of the financial system (a suggestion made by one respondent to the first round).

[1] As discussed in (Houstoun et al., 2014) while there is a theoretical argument that adoption of an inefficient standard can inhibit innovation and productivity (with the example of the QWERTY keyboard often cited as an example of such 'excess inertia') there is little evidence that agreement on standards have in practice often been a major impediment to technical innovation.

Round two highlighted four disadvantages of standards and current standards processes. As in round one, slow and lethargic governance by standards bodies was judged a major disadvantage of current standards (with 77% strongly agreeing). A the same time weak coordination by standards bodies was considered a major disadvantage by 50% of respondents, with poor coordination across jurisdictions considered a major disadvantage by 60%. 70% of respondents considered the lack of enforcement from regulators a major disadvantage – highlighting a consensus amongst our respondents on the central role of regulators in encouraging standardization in financial services.

Categorisation of standards
The work reviewed in our first report (Houstoun et al., 2014) suggested a range of was in which standards can be categorised. Categorisation of standards is important because it makes it possible to see the scope and breadth of their use and also because different types of standards (technical, process etc) are managed and used differently in organisations. In round one, the following suggestions were received for the categorisation of standards in financial services, which we have divided into low level and high level groups.

Table 2: categorisation of standards from the first survey round

Low level categorisations
• Data standards – messaging standards – technology standards • Data standards – messaging standards – documentation standards – notation standards – process standards • Data standards – operation standards • Data standards – process standards – technical standards • Technical specification – methodologies – codes of practices – guidelines
High level categorizations (applicable in many industries, not just financial markets)
• HR standards – technology standards – accounting standards – health and safety standards • Principles – processes - behavioural • Technical – business – legal

Analysis from round two revealed that respondents strongly agreeing with the low level classifications (77% strongly agreed with the first classification), but lower levels of agreement with the broader classifications of standards (only 55% of respondents strongly agreed with "Principles – Processes – Behavioural"). However, despite this, over 70% of respondents strongly agreed that such a classification of standards would be useful for the industry.

Immediately apparent from this list is the focus of our respondents on data standards, messaging standards and other such technical standards. This is perhaps not surprising given profile of our working group, but notable also that there our respondents put relatively little emphasis on other standards possibly relevant to them and definitely to the business.

The final question in the section on the standards process asked participants what they thought was necessary to maintain standards and support their adoption. It turned out to fairly natural step to group these answers into two sets: individual suggestions and complete packages of reform.

The individual suggestions were typically in the form one or two key phrases, for example: "good governance", "senior sponsorship", "engaged stakeholders" and "a trade body".

The more complete suggestions for solutions (offered by only three participants) were much more comprehensive. The most detailed of these consisted of the following elements:

- Committee structure with well-defined (and documented) governance and processes.
- Full-time staff to support committees in actual implementation of artefacts for the standard
- Roadmap showing the intended evolution of the standard to give a planning horizon to the management level.
- Website providing open access to documentation (normative, supportive, high level slide sets) and discussion forums for interactive exchange between a) committee members and users of the standard and b) amongst users.
- Incentives for volunteers (and their organisations) offering time to the committees.
- Events promoting the standard by showing actual use cases and getting users together - Incentives for compliance with the standard (e.g. visibility of those that lead by example)

These three package solutions consider in much more detail the complete arrangements necessary for the successful adoption and maintenance of standards. Round two of the Delphi survey revealed a strong agreement for most items on the list, with each of the following being rated strongly agree by the percentage of respondents:

Table 3: support for a programme to promote standardization

Percentage of second round respondents in strong agreement with required elements for a package for promotion of standardization in financial markets.	
Active Community	100%
Good Governance	100%
Senior Sponsorship	100%
Obtaining critical mass	90%
Promotion events	90%
Education programmes	80%
Stakeholder engagement	80%
Incentives for compliance	70%

(This all options in this table were answered by 10 respondents)

We regard this as one of the clearest findings from our survey. Even with such a small number of respondents there is widespread agreement on the need for active management of the development, adoption and maintenance of standards in global financial markets, something which is simply not at least yet happening on any scale.

3.2 The Current State of Standards in Financial Services

We now move onto the second of the four sections of the survey on the current state of standards in financial services.

The first question in this section of the first round of the survey asked for a list standards relevant to global financial markets. In round two we gave respondents an opportunity to add to this list. Table 4 reports the resulting list of standards from both rounds of the survey, divided into generic standards applicable to other industries but adopted in financial markets and standards specific to the industry.

The generic standards mentioned by respondents were almost all finance and accounting focused. The earlier question about categorisation of standards shows that a number of respondents are aware of other applicable standards (e.g. health and safety, business process), but when asked to name specific standards the responses are less wide ranging.

Even from this relatively small number of respondents, it is striking how long a list there is of standards developed specifically for the industry. Many but not all are discussed in our first report (Houstoun et al., 2014).

Utilising the benefit of free text fields in the first round of the survey the following case study in the use of ISIN was offered:

> ISIN Case study:
> *Instrument data. The 'official' standard is ISIN (with or without country code or MIC if you want to identify individual listings of a single instrument). But because ISINs are cumbersome and impossible to remember, most front office practitioners use RICs (proprietary) or Bloomberg codes (also proprietary, though Bloomberg have opened this up recently). European MTFs have created yet another symbology (UMTF codes). The issue here is that there is a problem (everybody recognises that ISIN is 'right' but hard to use) but the solution wasn't to fix the underlying problem (e.g. by creating an ISIN alias or similar which was human-usable and maintained by ANNAs rather than proprietary vendors), but to try to co-opt other symbologies and treat them as a standard.*

Consistent with this view another respondent argued (in similar vein to our own report (Houstoun et al., 2014) even thought that was not available to respondents at the time of completing the first round of the survey) that the financial services industry does not have the attitude to standards that we see in other industries (e.g. IT, retail, automotive, shipping) and that there is less of an appetite to invest in standards and cooperate than can be seen elsewhere. They continued that this attitude is starting to change as institutions realise that many problems, either from new competitors or regulation, are best addressed collectively.

Table 4 A list of standards from rounds one and two

Generic standards adopted by financial industry	Standards developed specifically for the industry
GAAP IFRS XBRL ISO 27001 information security XML and other W3C related Currency codes Country codes Advanced Message Queuing Protocol BIAN (Banking Industry Architecture Network) ISO 1087 terminology standards SBVR UML Unified Modelling Language (used to support the generation of ISO 20022-compliant processes and messages)	FpML FIBO LEI ACTUS FIX SWIFT standards including MT ISO 20022 ISO 15022 Research Information Exchange Markup Language Market Data Definition Language Market Identifier Code Business Identifier Code (ISO 9362) ISO 8583 Acord (insurance) IFX (messaging) Twist Standards ISIN IBAN BS 8453 Compliance framework for Financial Services ISO 10962 Classification of Financial Instruments OMG FIGI Financial Instrument Global Identifier Standard -non-proprietary, open and free standard for uniquely and persistently identifying financial instruments by trading venue across all asset classes ISO 8109 Format of Eurobonds ISO 8532 Format of certificate numbers ISO 9019 Numbering of certificates ISO 10962 Classification of Financial Instruments ISO 18774 Financial Instrument Short Name AII Alternative Instrument Identifier UPI Unique Product Identifier UTI Unique Trade Identifier USI Unique Swaps Identifier

The first round of the survey then asked respondents to list areas where either markets have failed to develop standards (responses summarised in Table 5, together with the "modal" i.e. most common response in round two) or areas where standards exist but are fragmented, poorly maintained or insufficiently adopted (responses summarised Table 6, again together with round two modal response).

Table 5 Opinions on areas the markets have failed to develop standards sufficiently

Area (identified from round 1)	Modal response from Delphi round 2
Corporate Actions issuance	Strongly agree – 60%
Business / Data terms	Strongly agree – 42%
Payment standards	Slightly disagree – 57%
Common understanding of domains of financial industry work	Slightly agree – 37.5% Slightly disagree – 37.5%
ISIN	Slightly agree – 44.4% Slightly disagree – 44.4%
CFI (Classification of financial instrument codes)	Slightly agree – 56%
Financial contracts	Strongly agree – 78%
Identifiers	Slightly agree – 50%
Classifier schemes	Slightly agree – 37.5%
supporting technology (fintech),	Slightly disagree – 43%
improving data processes (transactional exchange)	Strongly agree – 43% Slightly agree – 43%
policy wording and risk management (insurance)	Slightly agree – 67%
Anti-Money Laundering and KYC processes	Slightly agree – 40% Slightly disagree – 40%
Maintaining the quality of customer data [assets] in Tax Incentivised Savings Organisations	Slightly agree – 50% Slightly disagree – 50%

(Response rates for the individual items in this table range from 5 through to 9, from which the modal responses were calculated)

There are some common themes from both these lines of questioning. Firstly very few of our fifteen respondents express strong disagreement with the statements that across the wide range of suggested areas standards are insufficiently developed (Table 5). The strongest agreements that there is lack of standardization are in relation to corporate actions, the definitions of financial contracts and the potential for improved data processes in transactions. This is very much in line with the conclusion of (Houstoun et al., 2014) that standards in financial services are very underdeveloped compared with other industries.[2]

[2] One respondent mentioned the research jointly published by BSI, the CISI and Long Finance (Mainelli & von Gunten, 2013) and also cited in (Houstoun et al., 2014) which found the financial services sector to be a comparatively low user of standards compared to some other industries.

The responses in respect of fragmentation, lack of adoption and lack of maintenance (Table 6) also suggest a consensus that the degree of effective standardization is less than is desirable. Respondents here typically identified rather categories of standard, or specific standard setting institutions, rather than individual standards. There is somewhat greater range of views on these broader categories than for the individual standards mentioned in Table 4. Once again though there is very little indication of strong disagreement with the view that standards in global financial markets are characterised by fragmentation and lack of adoption.

Table 6 Opinions on areas where standards are fragmented, insufficiently adopted or poorly maintained

Area (identified from round 1)	Modal response from Delphi round 2
Code Tables	Strongly agree – 40% Slightly agree – 40%
ISO 15022 / ISO 20022	Slightly agree – 60%
Overlaps between ISO, FPML and FIX	Slightly agree – 75%
Fixed Income	Slightly disagree – 56%
Derivatives	Strongly agree – 33%
Extended remittance information for payments	Slightly agree – 83%
Standard Industry Data Models	Strongly agree – 56%
Financial Instruments definitions	Strongly agree – 56%
Market Participant Classifications	Strongly agree – 57%
Analytics within transaction systems	Strongly agree – 45%
Identification of Financial Instruments	Strongly agree – 30% Slightly agree – 30% Slightly disagree – 30%
Messaging Space	Slightly agree – 50%
Financial and Business Reporting	Slightly agree – 50%

(Response rates to individual questions in this section ranged from 5 (e.g. Code tables and extended remittance), through to 9 (e.g. financial instruments), with one respondent choosing not to answer any questions in this section)

Several textual comments, mainly from the first round of the survey, back up this conclusion that standards experts generally view standards in financial markets as very undeveloped. One respondent expressed this as follows "*It´s an expensively created mess. No other industry could ever afford to create such a mess with so much effort.*"

Another expressed concern about the governance of standards "*Dominance of proprietary standards is a big problem. Rent seeking by financial infrastructures by pushing their own standards*". A third suggested that much can be learned from other industries: "*We need to separate technical (transport, timing, identifiers, etc.) areas from business areas, and build on standardized approaches to technical issues that may come from outside of financial services.*"

These are individual opinions and further research is required to establish how widely shared they are. We can also highlight some suggestions about how these problems can be addressed. A problem raised by one respondent is lack of understanding about the actual usage of standards, again suggesting scope for centralised action by regulators to address this problem: "*There is very little centralised knowledge related to the actual usage of standards on a detailed level. Changing a standard may or may not lead to a breakage in applications using it. This leads to the inability to make changes and the introduction of redundancies to support changed behaviour. Regulators have the chance to embrace and also enforce the adoption of standards as well as the migration to newer versions of a standard.*"

Others are more sanguine about what the industry can achieve on its own. So for example one respondent wrote: "*I think it's safe to say that convergence [of this wide range of standards] will never happen but interoperability is something we've all been working towards together for the last few years. For example, for buy-side to sell-side communication, whether post-trade will be FIX or ISO largely depends on who within the buy-side firm is driving the straight through processing initiatives. If the initiative is driven by the front-office, the firm will likely already have an investment in FIX and it will be easier to implement post-trade functions via FIX. If the initiative is driven by the back-office, they will likely be using ISO, making it less expensive to automate post-trade using ISO messaging.*"

Our own view is that the picture is likely to be nuanced and further research must be undertaken to identify more precisely the situation on the ground. , 'Convertors' that provide a bridge between two different standards can in some cases provide a means to achieve interoperability without requiring users to completely re-engineer their business processes. But again there is no clearly established of when such convertors can work effectively in global financial markets and where more fundamental standardization is likely to be necessary. Again further research is needed.

3.3 Opportunities for Standards Development in Global Financial Markets

The third main section of the survey moved away from standards processes and the current state of standardization to look at what opportunities exist for standards development in global financial markets. Table 7 below shows the results from the survey questions asking what areas showed most promise for standards development over the next 5 years. Here there was a considerable degree of consensus, with findings from round two of the Delphi revealing that all respondents either slightly agreed or strongly agreed with the areas identified in the first round.

One feature that again emerges from this section of the survey as well as others is the key role of regulators. In terms of future opportunities for standardization this emerges both in relation to the conduct of stress tests and also more generally to reducing the costs of regulation.

Stress tests have been established as a standard tool of regulatory oversight in both the US and Europe since the global financial crisis. In the context of stress testing standardization of exposure data is needed not only to reduce the cost but also to increase its quality and timeliness. Systemic risk analysis is extremely difficult without such standardization.

As one respondent described the situation banks are "fighting with the analytical chaos since the appearance of the computer" but (in our paraphrasing) they have become used to the situation and have been able to get by from day to day without having to develop fully standardised exposure data. Now however they are subject to considerable additional reporting and regulatory burden that could be drastically decreased by standardization. The processes by which new rules are implemented can be shortened and made more efficient via the use of standards, and the information to the regulator can be delivered such that the processing of that information is made easier.

Table 7 Most promising areas of standards developments over the next 3-5 years

Stress testing
Systemic risk analysis
Other analytics
Regulation
Financial risk measurement standards
Replacement of local/proprietary standards
The inherent high costs of some existing standards and their institutionalised development bodies
Normalisation of financial instrument data
Rollout of LEI
Insurance
Investment/Asset Management Industries
Ontologies of detailed, specific areas of interest
Efforts to improve trust and transparency
Data sharing requirements

Responses reported in Table 7 highlight the range of different business lines and activities where there are opportunities for greater standardization. Our respondents highlight the benefits of establishing better identifiers -- the nouns and verbs of a common financial language (as argued by (Ali, Haldane, & Nahai-Williamson, 2012)). They also note the opportunities for standardization has to be developed for many different business activities and processes, including in particular insurance and investment and asset management

The role of technology in affecting development and adoption of standards was also explored in this part of the Delphi survey. It was initially found in round one that technology was something of a "double edged sword", offering opportunities for standards on one hand, yet also being the reason to not use standards on the other. Implied in several answers, and stated explicitly in another, was the view that it is easier to "code around" a lack of standards rather than wait for the standards process to fill the gap or fix the problem (70% of respondents agreed with this in round two of the Delphi).

Round one responses also suggested that, theoretically, technology should make implementation of standards easier and cheaper. In practice large parts of the financial industry are held back by the fact that key services are implemented using legacy technology that is difficult to change and (almost) impossible to replace. For example "*SWIFT was a pioneering encrypted network using proprietary technology. The same task could be done today much cheaper, much more secure and in a way that would allow significant innovation*." (80% of respondents strongly agreed with this in round two of the survey)

It was also reported that technology would have a large impact on retail/consumer markets and the fintech industries where new, innovative and increasingly customised products and services (i.e. insurance, digital banking, comparison services, aggregation services) enter the market. The rise of new currencies, exchanges and trading platforms are also fuelled by technology and innovation (100 % of respondents agreed with the statement in round two of the Delphi).

As we have already highlighted, several round one responses linked standardization and the burden of regulation. Table 8 reports the responses to specific questioning on this issue. This suggests a perception of at least potential substantial reduction in the burden of regulation through standardization.

Table 8: standardization and the burden of regulation

	Modal response from round 2
Standards can act as an alternative to regulation or complement it (work alongside it effectively)	Strongly agree – 68%
Standards will relieve the burden of trying to interpret the regulations	Strongly agree – 35%
Standards can reduce the heavy levels of duplication of effort and can help automate many currently manual analytic and compliance assurance processes and assist in the adoption of big-data approaches for better more proactive decision making	Strongly agree – 81%
Standards help to a considerable extent but for the benefits to be maximized, regulators need to sign on to the standards agenda too.	Strongly agree – 81%
The focus should be on internal risk and operational management - if those are properly addressed compliance will not be an issue	Strongly disagree – 33%
Agreement of common standards between regulators will save the industry (including the regulators themselves) in implementation costs.	Strongly agree – 81%
Regulators need to make standards mandatory for regulatory compliance	Strongly agree – 50% Slightly agree – 50%
Standards bodies also have a role by being open, responsive and flexible.	Strongly agree – 70%
Dramatically, especially by the adoption of	Slightly agree – 62%

certified standards which need to be re-certified on a regular basis.	

(Note – not all respondents agreed that all of the entries above were relevant statements about the relationship between regulation and standardisation. Some options were rated by 10 respondents, whilst others were only rated by 8 respondents)

Our first round also asked about which institutions would be the innovators and first adopters of standards. This produced very wide range of responses, including expectation that this would be by regulators, large financial corporations, (stakeholders) in emerging economies, market infrastructure providers, fintech industry, hedge funds, buyside, and vendors supporting buyside. Radical innovations such as bitcoin users and developers were referred to as a standard in disguise, with one respondent arguing that there are lot of these shadow-standards around and they tend to be associated with innovation. Given the rather unfocused nature of these first round answers, and our limited resourcing, this question was not pursued further in round two.

3.4 Coordination and Barriers to Standards in Global Financial Markets

The final section of the initial questionnaire asked respondents their opinions on the current level of coordination, the importance of board level engagement and the role regulatory mandate has to play in encourage the use of standards. As the last section of the survey, the number of respondents answering these questions started to fall – only four respondents answered the question on coordination for example.

Considering the responses to the question on whether respondents felt there was already enough coordination on standards in financial markets, the answer is a clear no. "*Lots of effort in standardization in financial markets but much of it in the wrong direction and uncoordinated*" was one response, and perhaps typical of the sentiment of others. Another respondent highlighted the challenge that exists with the way standardization was approached in financial services, stating that: "*most standards are volunteer driven and day jobs take priority, severely limiting the level of resources needing to move standardization along at a proper pace*." A third respondent also questioned whether coordination alone was enough, given that standardization is about reaching consensus on processes and raised the concern that "*larger standardisers could try to create monopolies as a barrier to sufficient coordination*".

With the exception of one lone voice, there was overwhelming support for regulators to play a significant role in the standardization process in global financial services. Starting with standards in general, regulatory mandate helps "*ensure open, public good standards*". By "*acknowledging the importance of standards*" regulators should help to realise the benefits to themselves but also those being regulated. It was also argued "*regulators should get more involved with the standards development to ensure that their needs are met*." Again, regulators should not try to find a single standard that covers everything but endorse a small set of major standards already in use by large parts of the community they regulate. Considering the disadvantages, new regulation (which may be standards based) "*is often costly for market participants, however, the additional financial burden can be minimized by framing such new rules and regulations around the use of a common standards*". Looking at the reverse argument, one survey respondent argues that "*regulatory nudges are probably more effective than regulatory mandates*", claiming that the financial services industry is "*highly cynica*l" about regulatory mandates that are consistently published and propagated but seldom if ever enforced (and example given being best execution rules under MiFID 1).

Finally, getting board level engagement was again seen as vital and essential among survey respondents, with the recognition from one respondent that although they will not be involved in the technical committee etc, it is important to have senior level people "*who understand the importance of standards adoption and will greatly advocate their use*". This also correlates with another comment that "*standardization requires a long term view*" something that may not be so front and centre in the lower level, more profit focused, parts of firms. As was argued by another respondent "*without clear board support and prioritisation, standards based initiatives often founder or are never started. Board engagement ideally links key industry/strategic concerns such as unacceptable risk exposures, inability to maintain margins and regulatory risk to the standards in their role as a solution*". There was however an insistence among two respondents to state that there also needs to be "*sufficient regulator involvement …client engagement … and engagement from supra-national organisations such as the EU and G20.*"

Round two provided additional support for many of these first round views (Table 9). These further responses helped to at last partly overcome the problem of survey fatigue which resulted in such a poor response on this issue in the final section of the first round.

Table 9: Barriers to Standardization

Percentage of second round responses slightly or strongly agreeing with statements on barriers to standardization.		
a)	Most standards are volunteer driven and day jobs take priority, severely limiting the level of resources needed to move standardization along at a proper pace	100%
b)	There has been no, or very little, coordination of effort for pursing opportunities for standards development –	60%
c)	Individual standardizers seek to act as monopolies –	53%
d)	Without critical mass nobody takes a standard seriously enough	90%
e)	It is essential to have a large number of potential users involved in the development of a standard at the start, as early adoption by an involved group provides a greater incentive for others to adopt –	60%
f)	Barriers to entry should be kept as low as possible to achieve critical mass, after which growth should become self sustaining –	90%
g)	Standardization reduces barriers of entry, i.e. complexity can be a business interest to maintain market share –	100%
h)	There is always a tension when the short-term desire to lock-in	100%

	customers is balanced against adopting an open standard - enabling customers to switch but potentially also growing the market for a given service –	
i)	Board level engagement is very important to get the support for the transition period when adopting standards and learning to live with the new external dependencies –	80%
j)	Without clear board support and prioritization standards based initiatives often founder or are never started –	63%
k)	Regulators should get more involved with the standards development to ensure that their needs are met –	90%
l)	Regulatory involvement is vital in the standards world –	100%

(Note – not all respondents agreed that the all of the above were barriers to standardisation and some respondents felt that the specific barrier was better described under a different category. For example, only 10 people answered part c, with 9 slightly or strongly agreeing).

These responses confirm much of the picture about barriers to standardization from the earlier parts of the survey. Firms in global financial markets devote relatively little resource to standardization. As a result much standards work is carried out as an additional voluntary responsibility, carried out after other higher priority responsibilities within the firm are dealt with (100% agreement with statement (a) in Table 9). There is a tension between the short term interest of firms in maintaining margins from existing activities and the long term interest in standardization initiatives that support innovation and growth of the entire market (90% and 100% agreement with statements. Other responses in Table 9 indicate as well that a majority of respondents see adoption and achieving critical mass as another major barrier to standardization (questions (d) –(f)) and close involvement from both senior board level management and regulators is needed to ensure this is achieved (responses to questions (i)-(l)).

4. Conclusions

This paper reports the outcome of Delphi survey of the views of a small sample of professionals involved in standards and standard setting in global financial markets, conducted in two rounds between August 2014 and February 2015. In this concluding section we first summarise the survey results. We then draw policy conclusions. Finally (since much of the value from a survey such as this comes from the specific flavour provide by individual responses) we provide some particularly insightful quotations provided by our respondents.

Summary of survey results

The survey questions focused on the business and economic benefits available from greater standardization in financial markets and the barriers that prevent these benefits being achieved.

Because of the small sample (fifteen respondents providing replies in each round) this should be regarded as a pilot study, illustrating the kind of findings that can be obtained using such a survey of standards professionals. Nevertheless, even with this relatively small sample, the survey provides clear support to and extending the analysis of our earlier 'preliminary' report on standards in global financial markets (Houstoun et al., 2014).

A first prominent finding from this survey is confirmation that standards specialists believe that there are substantial benefits from standardization in financial markets but these benefits are far from being fully achieved. These benefits come in particular from improved interoperability, cost reduction and automation as well as from reducing the burden and impact of regulation (Figure 1 and related discussion). Opportunities for beneficial standardization arise in many different areas of business and business processes (Table 7) including the reduction of regulator burden (Table 8). Progress on standardization though falls well short of what could be usefully achieved. While there are already of course many existing standards (Table 4) several of these could usefully be developed further to overcome fragmentation or lack of adoption (Table 6) and there are many other areas of activity where the market has failed to develop standards sufficiently (Table 5).

A second prominent finding is the need for high level involvement and adequate resourcing in order to make better progress on standardization. There is a clear consensus that the barriers to standardization are substantial (Table 9). The proposals for far reaching packages of reform suggested by some of our respondents attracted widespread support (Table 3). But it is also clear that regulators are going to have to play a central role in promoting standardization (a repeated theme volunteered by respondents to all sections of the survey) and that senior board level management across all sides of the industry must be involved, in order to commit the resources necessary for effective standardization.

Resourcing is also needed to identify practical opportunities for standardization and develop standards with a sufficient critical mass of committed adopters.

This conclusion is supported the round two discussion of the disadvantages of standards (summarised here in the text following Figure 2 and also by responses in Table 3 and Table 9). Here we can highlight for immediate attention one particular and immediate gap noted by one of our respondents, the absence of any credible and comprehensive surveys of the standards landscape in financial markets.

Policy conclusions
We draw two principal policy conclusions from this survey and our previous work on standards in global financial markets reported in (Houstoun et al., 2014). The first is that there is pressing need for developing coherent institutional arrangements for promoting standardization spanning the entire industry. Regulators will have to play the leading role in developing new institutional arrangements of this kind. But they will have to work in conjunction with senior management in industry to make these arrangements effective. This is necessary in order to provide the many dedicated standards professionals in the industry with the environment and opportunity to finally achieve the long promised business and prudential benefits of standardization.

The second is that these new institutional arrangements will only be effective if adequate resources are brought to bear on standardization in global financial markets (a further highlight of our survey results and one of the main reasons why it is necessary to bring senior management of the major firms onside).

A key point here from our survey is that the benefits of standardization to industry are *not* the same as those perceived by prudential regulators. Regulators are primarily concerned with standardization as a means of promoting greater transparency and improving the quality of regulatory reporting. Our survey respondents placed much greater stress on the business benefits of standardization. This in turn suggests that progress on standardization in global financial markets is not going to come from statements of regulatory requirements alone (because industry participants will not be sufficiently motivated to develop or adopt imposed standards designed with the interests of regulators in mind). As one of our respondents stated: "*Standards flourish when they are open public good product developed via consensus. top down push to standards is not a workable solution.*"

Instead progress is going to require regulator initiative but also going to have to come from *collaboration* between regulators and industry. This should be possible, since both sides have a strong interest in seeing progress in standardization in global financial markets and achieving the substantial benefits identified in our survey. It is though going to require flexibility and open mindedness on both sides. There are no obvious examples of such regulatory-industry collaboration in other industries that can be used as a model. Hence a great deal of work to establish what arrangements will be effective.

Some insightful remarks
We finish this concluding section by quoting some of the more insightful remarks made by our survey respondents on the key issues raised in both this paper and our accompanying 'preliminary report' (Houstoun et al., 2014).

First some remarks pertaining to the complex challenges of co-ordinating standards and standards development. One respondent argued that "*We need: (a) A central directory of standards, with as much indicative information about the standards as possible (b) Ratings of the different standards - done independently (c) Standard processes for developing standards*."

Another argued, equally ambitiously "*There will always be multiple standards in the financial industry. Terminology plays a key role in understanding standards. Rather than trying to enforce a single set of terms globally and across all standards, one should have proper definitions defining the semantic of a given term. This in turn allows finding equivalent terms, which can be referenced by all standards to ease a translation between standards where it cannot be avoided in the first place. This is a non-technical task although it can be supported by a technical infrastructure with repositories storing the information needed by humans to understand a given standard."*

A third argued (perhaps more in hope than expectation since we do not have the impression that this is yet a widespread view) that "*Some experience of standards, their negotiation, implementation and development are essential parts of the armoury of a contemporary seasoned Financial Services Executive.*"

A fourth that "*A specific challenge we should look into is how we incentivise the industry to allow experts (who already have day jobs) adequate time to assist with standards development".*

These four quotations each provide in their own way valuable snapshots of the challenge of developing effective institutions for standardization in global financial markets and support our own policy conclusion that progress requires regulatory- industry collaboration.

Finally we can think of no better way of ending our paper than to quote the views of one of our respondents who argued as follows:

> *"I want to come back to the question on funding and resourcing. I have highlighted in my earlier responses some failures of current standards bodies in terms of responsiveness, process and documentation quality. A lot of this comes down simply to resourcing (and the right kind of resourcing, i.e. business practitioners as well as data/process modellers). In my experience, the best work arises with a mixture of these two types of people but it costs time and money."*

Senior regulators and senior management, if you want to reap the benefits of standardization, please pay heed.

Appendix 1: survey questions from initial round

Loughborough University

Standards in Global Financial Markets Survey

Welcome

The purpose of this questionnaire is to explore the views of and establish the extent of consensus amongst market professionals on standards in global financial markets.

The questionnaire will be conducted using the "Delphi method". Following this initial round there will be further iterations where we will summarise and interpret responses, feed them back to respondents and develop further more specific questions based on the outcome from earlier rounds. The Delphi method is a well established process for developing a consensus of views amongst experts and reducing researcher bias.

The respondents to the questionnaire -- i.e. you -- are all professionals involved in standards, transactions and data management in a variety of firms. The questions will explore and (in subsequent rounds) confirm views on standards in general, on the current state of standards in global financial markets, on opportunities for standards development and on barriers to change.

In conducting the various rounds of the survey we will take into account additional sources of public domain information e.g. the standards co-ordination group investment road map.

This initial round of the questionnaire is relatively long and the questions are quite open-ended. We are hoping you can spare 40-50 minutes to enter your responses online. Subsequent rounds will be shorter and more focused. The survey is completed anonymously.

Section 1: Demographic Information
1. What is your role within your organisation?
2. Which category best describes your industry? Please delete those not relevant
Commercial bank Investment bank/ broker dealer Asset manager Long term investor Corporate issuer Trade body Market infrastructure such as exchange or central counterparty Standards body such as FIX, FpML or SWIFT Vendor Market Infrastructure vendor Other (please specify):
3. What is your location? Please delete those not relevant
Europe, North America, South America, Asia, Africa, Australasia

Section 2: Standards and the Standardization Process
4. How would you define a standard?
5. What do you think are the characteristics of a good standard?
6. What different categories of standards do you think are relevant to your own work?
7. What benefits are you aware of that standards provide?
8. What disadvantages are you aware of that standards provide?
9. What arrangements are needed for maintaining standards and ensuring effective adoption?

Section 3: The Current State of Standards in Financial Services
10. What standards are you aware of currently, in global financial markets and other financial services?
11. Are there any areas you feel the market has to date failed to develop standards sufficiently?
12. Are there any areas where standards have been developed but are excessively fragmented, insufficiently adopted or poorly maintained?
13. Do you have any other comments on the current state of standards in financial services?

Section 4: Opportunities for Standards Development in Global Financial Markets
14. What do you see are the most promising opportunities for standards development in global financial markets over the next 3-5 years?
15. How are changes in technology affecting these opportunities?
16. Who are likely to be the first adopters as these opportunities are pursued?
17. To what extent can development of standards help firms cope with the increasing burden of regulation in financial markets?

Section 5: Coordination and Barriers to Standards in Global Financial Markets
18. Is there sufficient and effective coordination, for pursuing the opportunities for standards development in global financial markets?
19. To what extent is failure to achieve 'critical mass' a barrier to pursuing these opportunities?
20. To what extent are business interests an obstacle to standards adoption?
21. To what extent is board level engagement needed to support standards development and adoption? Is more of this engagement needed and if so what form should it take?
22. To what extent is regulatory mandate needed to support standards development and adoption? Is more regulatory involvement needed and if so of what kind?

Section 6: Any other comments
23. Are there any other comments/suggestions you would like to contribute (e.g. raising issues that are not reflected in these initial questions)?

Appendix 2: survey questions from second and final round

1. Which of these descriptions best describe the benefits of standards and standardization?
Please leave row blank if you feel point is captured better by other descriptions

1.1 Interoperability between technology and processes -
1.2 Enabling a common language in specific areas
1.3 Cost reduction and efficiency savings
1.4 Optimised and improved performance
1.5 Increase in automation
1.6 Reduction in operational risk, customer risk, legal risk
1.7 Platform/enabler for innovation
1.8 Simplification of infrastructure
1.9 Improving ease of oversight/regulation
1.10 Resolution of trust problems
1.11 Best practices available to all
1.12 Leveraging community learning
1.13 Drive commoditisation
1.14 Generate or improve access to markets or customers
1.15 Enable constructive competition
1.16 Reduce market friction
1.17 Create level playing field
1.18 Reduce switching costs
1.19 Improve systemic resilience by eliminating dependencies on unique providers (and single points of failure)

2. Which of these descriptions best describe the costs of standards and standardization?
Please leave row blank if you feel point is captured better by other descriptions

2.1 Inflexibility and causes obsolete ways of doing things to emerge
2.2 Inhibits innovation
2.3 Out of date quickly
2.4 Reduce competition
2.5 Lead to misallocation of resources
2.6 Multiple standards in same area
2.7 Little coordination across standards settings bodies
2.8 Slow and heavy governance/standards bodies
2.9 Coordination across jurisdictions
2.10 Can lock in poor solutions
2.11 Unclear or too abstract to be useful
2.12 Barriers to markets through cost
2.13 Risk of not all stakeholders consulted
2.14 Under-resourcing of development, governance and updating
2.15 Lack of clear, unambiguous and comprehensive usage documentation
2.16 Cost of transition to new standard
2.17 Dependence on external governance and administration
2.18 Speed of technological change faster than standards development
2.19 Standards may not provide what they purport to provide
2.20 Standards may be of poor quality
2.21 Standards may be expensive
2.22 Standards may be difficult to learn
23 Lack of endorsement from regulators and other bodies that have the ability to enforce the use of standards

3. To what extent do you agree that the following classifications usefully distinguish different aspects of standardization?

3.1 Data standards -- messaging standards -- technology standards
3.2 Data standards -- messaging standards -- documentation standards -- notation standards -- process standards
3.3 HR standards -- technology standards -- accounting standards -- health and safety standards
3.4 Principles -- processes - behavioural
3.5 Technical -- business -- legal
3.6 Data standards -- operation standards
3.7 Data standards -- process standards -- technical standards
3.8 Technical specification -- methodologies -- codes of practices -- guidelines

4. If not already covered please suggest other alternative high level classifications.

5. To what extent do you agree that it will be useful to establish a consensus in the industry on this kind of classification of standards in global financial markets, for example in order to better guide efforts at future standardization?

6. To what extent are the following needed for maintaining standards and ensuring effective adoption?

6.1 A focus on clear and unambiguous description of contracts and cash flows
6.2 Roadmap showing the intended evolution of the standard
6.3 Website providing open access to documentation and discussion forums
6.4 Incentives for volunteers (and their organisations) offering time
6.5 Promotion events
6.6 Incentives for compliance with standard
6.7 Active community for development and maintenance of standard
6.8 Openness
6.9 Good governance
6.10 Senior sponsorship
6.11 Education, training and communication throughout the entire organisation/industry.
6.12 A trade body behind to help consistently push the effort and to ensure that the standard continues to meet emerging trading requirements and to promote its increased adoption.
6.13 Balance between central aspect of standard development and maintenance and local implementation and modification
6.14 Strong, engaged and savvy secretariat.
6.15 Delivery of benefits and a similar mitigation of burdens
6.16 User documentation with examples
6.17 All actual and potential users of the standard should be able to contribute to its design and maintenance.
6.18 Obtaining minimum critical mass
6.19 Effective stakeholder involvement throughout the lifecycle
6.20 Committee structure with well-defined (and documented) governance and processes.
6.21 Full-time staff to support committees in actual implementation of artefacts for the standard

7. Are there any standards you feel are missing from the list of standards in global financial markets and other financial services? Are there any you feel should be removed?

8. To what extent do you agree that the market has failed to develop standards sufficiently in the following areas? (Level of agreement from 1 to 4)

8.1 Corporate Actions issuance (from the issuer or issuer's agent)
8.2 Business / Data terms
8.3 Payment standards
8.4 Common understanding of domains of financial industry work
8.5 International Securities Identification Number
8.6 Classification of financial instruments
8.7 Financial contracts
8.8 Identifier schemes
8.9 Classifier schemes
8.10 Supporting technology (fintech),
8.11 Improving data processes (transactional exchange),
8.12 Policy wording and risk management (insurance), investment performance reporting & asset classification
8.13 Anti-Money Laundering and KYC processes
8.14 Maintaining the quality of customer data [assets] in Tax Incentivised Savings Organisations

9. To what extent do you agree that the following are areas where standards have been developed, but are excessively fragmented, insufficiently adopted or poorly maintained? (Level of agreement from 1 to 4)

9.1 Code Tables
9.2 ISO15022/20022
9.3 Overlaps between ISO and FPML and FIX
9.4 Fixed income
9.5 Derivatives
9.6 Extended remittance information for payments
9.7 Standard Industry Data Models
9.8 Financial Instruments definitions
9.9 Market participant classifications
9.10 Analytics within transaction systems
9.11 Identification of financial instruments (e.g. ISIN)
9.12 Messaging space (FIX, SWIFT, FPML)
9.13 Financial and business reporting (e.g. XBRL)

10. Please list any other areas where standards development is, or should be, a subject of attention.

11. How much do you agree with the following statements about the current state of standards in financial services? (Level of agreement from 1 to 4)

11.1 Standards in financial services are an expensively created mess. No other industry could ever afford to create such a mess with so much effort.
11.2 There is very little centralised knowledge related to the actual usage of standards on a detailed level in financial services.
11.3 Regulators have the chance to embrace and also enforce the adoption of standards as well as the migration to newer versions of a standard.
11.4 There is an unwillingness to change standards because it risks breaking applications that use them
11.5 Financial markets standardization currently appears to be much less advanced than in other information intensive industries
11.6 The dominance of proprietary standards is a big problem, including rent seeking by financial infrastructures by pushing their own standards
11.7 The financial services sector is comparatively low user of standards when compared to some other industries
11.8 The goal of standardisers in financial services is not always purely altruistic
11.9 There are existing standards outside of the financial services industry that have solved many of the problems we're trying to deal with, but the industry remains far too parochial.
11.10 That convergence on standards will never happen but interoperability is something we've all been working towards together for the last few years.
11.11 There is less of an appetite in the financial services industry to invest standards than we see in other industries (e.g. IT, retail, automotive, shipping), rooted in the culture of the financial services industry
11.12 I believe it's starting to change as institutions realize that many of the problems they face, from new competitors or regulation, are best addressed collectively, but it's a slow process.
11.13 Standards exist in the gaps between: common law in the UK and US; code based legal systems in Europe; institutional rules; and enterprise technology

12. To what extent do you agree that the following areas represent the most promising areas of standards developments in global financial markets over the next 3-5 years? (Level of agreement from 1 to 4)

12.1 Stress testing
12.2 Systemic risk analysis
12.3 Other analytics
12.4 Regulation
12.5 Financial risk measurement standards
12.6 Replacement of local/proprietary standards
12.7 The inherent high costs of some existing standards and their institutionalised development bodies
12.8 Normalisation of financial instrument data
12.9 Rollout of LEI
12.10 Insurance
12.11 Investment/Asset Management Industries
12.12 Ontologies of detailed, specific areas of interest
12.13 Efforts to improve trust and transparency
12.14 Investment/Asset Management Industries
12.15 Data sharing requirements

13. Please list other areas where you feel standards development is promising.

14. To what extent do you agree with the following statements on how technology is affecting opportunities for standards development in financial services? (Level of agreement from 1 to 4)

14.1 Technology is part of the problem - it is relatively easy to 'code round' a lack of standards in data or process

14.2 In principle, advances in technology make implementation of standards easier and cheaper. In practice large parts of the financial industry are held back by the fact that key services are implemented using legacy technology that is difficult to change and (almost) impossible to replace.

14.3 Dramatically, SWIFT was a pioneering encrypted network using proprietary technology. The same task could be done today much cheaper, much more secure and in a way that would allow significant innovation.

14.4 Issues related to source format become less important while highly scalable technologies and advances in semantic technology make semantics based convergence of content semantics and it practical application more likely

14.5 Technology will have a large impact on retail/consumer markets and the fintech industries where new, innovative and increasingly customised products and services (i.e. insurance, digital banking, comparison services, aggregation services) enter the market. The rise of new currencies, exchanges and trading platforms are also fuelled by technology and innovation.

14.6 Regulatory changes leads to new technological requirements - in addition to changes to standards, internal applications must be updated appropriately this way the regulator can, where necessary, gain access to standardized information flows with respect to its new rules.

15. Do you have any other comments you would like to make on the role of technology in standards development in financial markets?

16. In the business areas with which you are most familiar, to what extent do you agree that each of the following will play a key role in the adoption of new standards?

16.1 Regulators

16.2 Large financial corporations

16.3 Stakeholders in emerging economies

16.4 Market infrastructure providers

16.5 Fintech industry

16.6 Hedgefunds

16.7 Buyside

16.8 Vendors supporting buyside

16.9 Demand from new technological innovations

17. To what extent do you agree with the following statements on the role of standards in easing the burden of financial regulation? (Level of agreement from 1 to 4)

17.1 Standards can act as an alternative to regulation or complement it (work alongside it effectively)
17.2 Standards will relieve the burden of trying to interpret the regulations
17.3 Standards can reduce the heavy levels of duplication of effort and can help automate many currently manual analytic and compliance assurance processes and assist in the adoption of big-data approaches for better more proactive decision-making
17.4 Standards help to a considerable extent but for the benefits to be maximized, regulators need to sign on to the standards agenda too.
17.5 The focus should be on internal risk and operational management - if those are properly addressed compliance will not be an issue
17.6 Agreement of common standards between regulators will save the industry (including the regulators themselves) in implementation costs.
17.7 Regulators need to make standards mandatory for regulatory compliance
17.8 Standards bodies also have a role by being open, responsive and flexible.
17.9 Dramatically, especially by the adoption of certified standards which need to be re-certified on a regular basis.

18. How much do you agree with the following statements on the sufficient and effective coordination for pursuing the opportunities for standards development in global financial markets? (Level of agreement from 1 to 4)

18.1 There is a lot of effort but much of it is in the wrong direction.
18.2 Most standards are volunteer driven and day jobs take priority, severely limiting the level of resources needed to move standardization along at a proper pace.
18.3 There has been no, or very little, coordination of effort for pursing opportunities for standards development
18.4 Probably but it is essentially a broken project, most participants do not have large financial services sectors and yet have votes on ISO bodies.
18.5 Individual standardizers seek to act as monopolies
18.6 Fragmentation and tribalism still rules

19. To what extent do you agree with the following statements on the role of achieving critical mass to pursuing standards opportunities in financial markets? (Level of agreement from 1 to 4)

19.1 Not achieving critical mass is always a risk, but there is no alternative
19.2 Without critical mass nobody takes a standard seriously enough
19.3 Without critical mass end users end up having to push its adoption
19.4 It is essential to have a large number of potential users involved in the development of a standard at the start, as early adoption by an involved group provides a greater incentive for others to adopt.
19.5 Some standards provide sufficient value to the implementer to be worth the investment on a standalone basis whereas others require network effects to deliver any value.
19.6 Barriers to entry should be kept as low as possible to achieve critical mass, after which growth should become self sustaining.

20. To what extent do you agree with the following statements about business interests being an obstacle to standards adoption? (Level of agreement from 1 to 4)

20.1 Standards development should be an open effort for exactly this reason; a profit-seeking venture would never get accepted

20.2 Standardization reduces barriers of entry, i.e. complexity can be a business interest to maintain market share.

20.3 Standards allow to compare services and make it easier to find the best one (having a negative impact on the others).

20.4 There is always a tension when the short-term desire to lock-in customers is balanced against adopting an open standard - enabling customers to switch but potentially also growing the market for a given service.

20.5 Adopting a standard as an early adopter is often a leap of faith - difficult to justify in straitened times, and there are always more important things to invest in.

20.6 Only to the extent that as business models change, if the standards cannot adopt quickly enough then businesses will be forced off-standard.

20.7 Business interests are usually an obstacle because of tactical benefits and trust issues but not from a long term strategic perspective. Resolving trust issues, critical mass and compliance usually leads to fast near universal adoption thereafter.

21. To what extent do you agree with the following statements on board level engagement with standards development and adoption? (Level of agreement from 1 to 4)

21.1 In a firm, only the board level can ensure proper efforts and follow up.

21.2 Board level engagement is very important to get the support for the transition period when adopting standards and learning to live with the new external dependencies.

21.3 Board level engagement is vital - although they will not be the folks involved in the technical committee / working group discussions, each organization should have a board of directors / steering committee consisting of senior level folks who understand the importance of standards adoption and will greatly advocate their use.

21.4 Very important because standardization requires a long-term view.

21.5 Board level engagement helps especially as setting an example but so should regulator engagement, client engagement etc.

21.6 Engagement needs to come not from financial institution management, but from industry bodies and regulators, if not from supranational organisations such as the EU and G20

21.7 Board level engagement is needed and boards should require standard discovery and standard selection in all areas

21.8 Without clear board support and prioritisation standards based initiatives often founder or are never started.

21.9 Board engagement ideally links key industry/strategic concerns such as unacceptable risk exposures, inability to maintain margins and regulatory risk to the standards in their role as a solution.

22. To what extent is regulatory mandate needed to support standards development and adoption? Is more regulatory involvement needed and if so of what kind?

22.1 The OFR has been created to ensure this standard but they fail to execute. FSB is better. Regulators should do this, but there is little hope that they will perform.

22.2 Regulators should get more involved with the standards development to ensure that their needs are met.

22.3 Regulators should not try to find a single standard that covers everything but endorse a small set of major standards already in use by large parts of the community they regulate.

22.4 Regulatory involvement is vital in the standards world.

22.5 New regulation is often costly for market participants; however, the additional financial burden can be minimized by framing such new rules and regulations around the use of common standards.

22.6 All standards organizations should consistently be speaking and/or responding to comment letters from the regulatory authorities to continually educate them on the benefits of standards.

22.7 Regulatory mandate should ensure open public good standards

22.8 Regulation should acknowledge the importance of standards in realizing its own goals as well as reducing costs for the regulated.

22.9 Regulatory nudges are probably more effective than regulatory mandates.

22.10 Regulators have a significant role to play here and should feel free to endorse/mandate specific standards for specific purposes.

22.11 This would make regulators select standards, and the whole environment would become even more political.

23. How much do you agree with the following statements not covered in the rest of the survey? (Level of agreement from 1 to 4)

23.1 There is a need for a common language/taxonomy/ontology as the foundation for coordination between multiple standards.

23.2 Standards flourish when they are open public good product developed via consensus. A top down push for standards is not a workable solution.

23.3 There is a need for an increase in the level of standards knowledge among the executive level and regulators

23.4 A specific challenge is how we incentivise the industry to allow experts (who already have day jobs) adequate time to assist with standards development.

23.5 There is a need for a central directory of standards, with as much indicative information about the standards as possible

23.6 There is a need for different standards to be rated independently

24. Are there any other comments you would like to make regarding the nature of standards and standardization in global financial markets?

25. What is your role within your organisation?

26. Which category best describes your industry? 26If you selected Other, please specify:

27. What is your location?

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