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# ACCOUNTING INFORMATION SYSTEMS AS INSTITUTIONAL CARRIERS: A CASE STUDY OF REGULATORY COMPLIANCE IN UK ASSET MANAGEMENT HOUSES

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## Abstract

*Previously, governments have responded to the impacts of economic failures and consequently have developed more regulations to protect employees, customers, shareholders and the economic wellbeing of the state. Our research addresses how Accounting Information Systems (AIS) may act as carriers for institutionalised practices associated with maintaining regulatory compliance within the context of UK Asset Management Houses. The AIS was found to be a strong conduit for institutionalized compliance related practices, utilising symbolic systems, relational systems, routines and artefacts to carry approaches relating to regulative, normative and cultural-cognitive strands of institutionalism. Thus, AIS are integral to the development and dissipation of best practice for the management of regulatory compliance. As institutional elements are clearly present we argue that AIS and regulatory compliance provide a rich context to further institutionalism. Since AIS may act as conduits for regulatory approaches, both systems adopters and clients may benefit from actively seeking to codify and abstract best practices into AIS. However, the application of generic institutionalized approaches, which may be applied across similar organizations, must be tempered with each firm's business environment and associated regulatory exposure. A balance should be sought between approaches specific enough to be useful but generic enough to be universally applied.*

*Keywords: Institutional Theory, Institutional Carriers, Asset Management, Compliance, Accounting Information Systems.*

# 1 Introduction

The ability to accurately access and collate transaction related information is essential to both the furtherance of existing regulatory requirements by government and the adherence to existing requirements by effected firms. Accounting Information Systems (AIS) which, “*provide the mechanisms required to capture and store transactions, to ensure the accuracy, timeliness, and validity of those transactions, to satisfy the organization’s legal and regulatory requirements, and to inform all the stakeholders of the economic status of the organization*” are considered vital (Special Interest Group for Accounting Information Systems, 2009 p.1).

We propose that AIS may act as institutional carriers for practices associated with regulatory compliance. The research objective is to understand how new practices associated with the management of compliance may become legitimised and how AIS might act as conduits for these practices. By doing so, it is hoped to further understanding of how best practice for compliance management becomes established. To this end, institutional theory with its focus on legitimacy was identified as providing an appropriate theoretical foundation. Consequently, our study seeks to answer the following research question: *How do practices associated with regulatory mandates become institutionalised through AIS?* Thus, it the paper investigates: *How the different facets of AIS relate to Scott’s institutional carriers?*

The study makes a contribution in a number of ways. By applying our results to Scott’s (2008) framework of institutional pillars and carriers we shall be able to understand which facets of institutionalism are in play, thereby assisting further research in the underdeveloped area of AIS and regulatory compliance for capital markets. Previous studies utilising institutional theory have focused on the public and not-for-profit sector (Currie 2004) and so our second contribution is to apply institutional theory to the finance industry. Thirdly, our literature review shows there are few articles which utilise Scott’s work on institutional carriers. Web of Knowledge revealed only 20 articles which cite Scott’s original paper. Furthermore, it is noted that much of the literature addressing financial regulation focuses on the economic or legal implications with little representation within management literature.

This paper is structured as follows. Firstly, we discuss relevant theoretical constructs before outlining the results of a thorough literature review of the settings to which institutional theory has been applied in IS and the relevant studies addressing regulatory compliance and AIS. Consequently, gaps in the literature are identified and a conceptual framework developed. From this framework our research questions were derived. We then outline our research method before discussing the key findings of the paper within the analysis and discussion section. Finally, conclusions are drawn and areas for future research are identified.

## 2 Theoretical Foundation

Institutional theory provides the theoretical basis for this research study. This theoretical body of knowledge focuses on the causes of institutionalism, the process by which organizations affirm themselves and achieve approbation as a consequence of their alignment and compliance with the institutional contexts of their environment(Meyer and Rowan 1977; DiMaggio and Powell 1983; Greenwood, Oliver et al. 2008; Scott 2008; Tolbert and Zucker 1996).Scott (2008) provides a useful framework for incorporating the various strands of institutionalism, known as the ‘Three Pillars’. Table 1 describes the different aspects of each pillar.

	Regulative	Normative	Cultural Cognitive
Basis of Compliance	Expedience	Social obligation	Taken-for-grantedness, shared understanding
Basis of Order	Regulative rules	Binding expectations	Constitutive schema
Mechanisms	Coercive	Normative	Mimetic
Logic	Instrumentality	Appropriateness	Orthodoxy

Indicators	Rules, laws, sanctions	Certification, accreditation	Common beliefs, shared logics of action
Basis of legitimacy	Legally sanctioned	Morally governed	Comprehensible, recognizable, culturally supported

*Table 1 Three Pillars of Institutions (Scott 2008)*

Scott is at pains to highlight the fact that most institutions are made up of a mixture of these diverse elements and that few ‘pure-cases’ exist. All institutions, regardless of whether they are cognitive-cultural, normative or regulative, are conveyed through carriers (Jepperson 1991). Scott (2008) identifies four broad classes of institutional carriers and advises that the distinctions between carriers are largely orthogonal to the three pillars outlined in Table 1, here we classify them, see Table 2.

Carriers	Regulative	Normative	Cultural-cognitive
Symbolic systems	Rules, laws	Values, expectations, standards	Categories, typifications, schema
Relational systems	Governance systems, power systems	Regimes, authority systems	Structural isomorphism, identities
Routines	Protocols, standard operating procedures	Jobs, roles, obedience to duty	Scripts
Artefacts	Objects complying with mandated specifications	Objects meeting conventions, standards	Objects possessing specific symbolic value

*Table 2 Institutional Pillars and Carriers (Scott 2003; 2008)*

### 3 Institutional Theory, IT and Compliance

The application of institutional theory to information systems research is relatively new and has taken broadly two approaches: those studies that conceptualize the effects of institutionalization on an entity and those that treat institutionalization as a process (Weerakkody, Dwivedi and Irani 2009). This second research approach is less common and is the approach adopted by our study. Studies in the field of IS which have employed institutional theory have included the exploration of how institutionalized technologies may be under exploited, large scale IT implementations, organizational change, e-government, e-health and organizational integration (Avgerou 2002; Cordella and Barca 2006; Huigang et al. 2007; Mangan and Kelly 2009; Mekonnen and Sahay 2008). Studies which have concentrated on the process of institutionalization have focused on application service providers, security standards, professional services automation and customer relationship management (Backhouse, Hsu, and Silva 2006; Currie 2004; Wang and Swanson, 2008). Furthermore, two studies conducting a review of the use of institutional theory within the IS field found no research focused on AIS and regulatory compliance (Mignerat and Rivard, 2009; Weerakkody, Dwivedi and Irani 2009).

Previous IS studies have broadly touched on compliance by addressing such topics as IT Governance and internal control frameworks and how specific legislation can be leveraged to add value as well as making the case for a strategic approach to risk and compliance (Chatterjee and Milam 2008; Trites 2004; Wagner and Dittmar 2006; Weill and Ross 2004). However, AIS per se have been neglected. Cleven and Winter (2009) performed a review of IS literature focusing on compliance. Cleven and Winter’s (2009) review found only three papers that utilised institutional theory. The most relevant is Currie’s (2008) study which does adopt Scott’s (2008) three pillars framework and uses the context of regulation and investment management for her case studies. However, her focus is on conflicting organizational behaviours and outcomes as opposed to institutional carriers. Furthermore, from an AIS perspective, associated literature has often focused on the Sarbanes-Oxley Act and internal control (Shapiro and Matson 2008; Mock, Sun et al. 2009). Here there exists a clear link with our own study as the AIS under consideration provides *reasonable assurance* that limits are not breached by calculating and monitoring gross or net exposure by various attributes such as country, issuer, currency or counterparty. In conclusion, the literature is lacking when addressing understanding of

how regulatory mandates within the Asset Management sector cause associated practices and approaches to become institutionalised and how AIS may act as carriers of these institutions.

## 4 Compliance and Capital Markets

Figure 3 provides a diagrammatical representation of the phenomena to be explored. Mandates from government allow regulatory authorities to set new requirements in the forms of principles and rules often relating to the trading of specific financial instruments or ways in which firms must conduct their business. Examples of such regulation include the Undertakings for Collective Investment in Transferable Securities Directives (UCITS), the New Collective Investment Schemes Sourcebook (COLL) and the Markets in Financial Instruments Directive (MiFID). Within the UK all regulatory requirements emanating from either EU or UK legislation are outlined and defined by the UK regulator, the Financial Services Authority (FSA), in its handbook. These statutes to which financial organizations must adhere are applied on a transaction-by-transaction basis. That is, each transaction must be compliant with the relevant regulatory requirements. To ensure compliance, financial organizations must employ systems which ensure the correct workflows and processes are adhered to and that associated data is readily available and auditable. This is achieved by the definition and application of rules that are applied to relevant transactions. The quantity of rules may be vast. One investment firm interviewed had upwards of twenty-five thousand rules. As a senior compliance professional noted, “we’re very much, sort of coders of quantitative restrictions for investment compliance”.

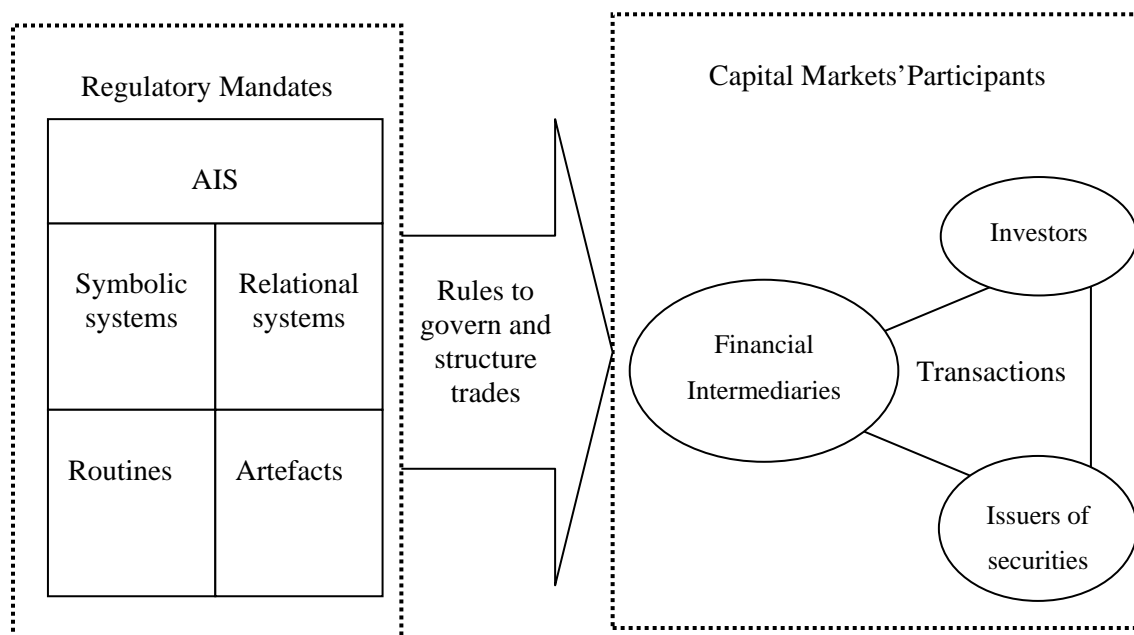


Figure 3

The transactions themselves are chiefly between three types of entity. The first type of capital market participants are defined by the circle marked *Investors*. This category includes entities who directly own securities as well as institutional investors who own securities for the firm's benefit or hold securities on behalf of others. *Issuers* include those corporations issuing shares in their company, corporate bonds, governments and local municipalities issuing bonds, as well as Unit Trust and Mutual Funds. Lastly, the entities represented by the circle entitled *Financial Intermediaries* are the third type of market participant. Asset Management Houses (AMH) fall into this category and aim to meet the investment objectives of their clients by managing the assets of investors, such as private corporations or pension funds. It is perhaps worth noting that these categories are not mutually exclusive one can be a financial organization as well as an issuer of shares. From this framework we derived the research questions outlined in the introduction and developed our research method and interview protocol.

## 5 Research Method

An interpretative qualitative research method was developed and a case study approach utilised. The study adopted a compliance system developed by an independent software vendor as the case and explored two implementations of this system at different UK based AMH. The case study method was chosen as being compatible and supportive of our research objectives and is appropriate as the study has important regulatory related contextual conditions which are specifically pertinent to the phenomena of compliance related systems in AMH. Consequently, context and phenomena cannot easily be divorced from one another (Yin 2009). Furthermore, an intrinsic case study approach (Punch 2005) where a single case is used is an appropriate method of examining a specific issue or facets of theory, such as intuitional carriers. Examples of the types of question used in our interview protocol include, *"How are shared values regarding best practice disseminated across compliance practitioners?"* This question evoked responses which addressed communities of practice and so provided insight into the role of Scott's (2008) relational systems within our study.

The system's vendor, which provides the case study for the research, is a well-established compliance systems solutions provider in business since the early 1980's. The vendor provides Investment Management Systems (IMS) which can handle numerous asset and currency types and provides automated decision support, portfolio management, order and execution management and post-trade processing. Specifically, the compliance module is predominantly rules driven providing 1,700 automated compliance rules across 35 regulatory bodies in 20 countries. The system provides functionality for rule-building, rule testing and maintenance, real-time compliance monitoring and management. Risk analysis is enabled by the system by enabling upper and lower limit and concentration tests as well as comparison benchmarking. The system also provides customizable reporting and an audit trail.

Consequently, it is felt that the compliance module of the IMS meets the definition of AIS outlined in the introduction. Two AMH who were long-term adopters of the IMS compliance module were chosen to provide insight on how the system was actually being used to meet regulatory requirements. Criteria for selection included the fact that both firms were large global entities, which had implemented the IMS Compliance module globally and also had a comparable number of assets under management. In addition, both firms have been using the system for over 10 years. Furthermore, both firms provide congruous products and services and so have a similar level of regulatory exposure. However, as is typical with such implementations at both AMH, a significant amount of customization has taken place to facilitate necessary systems integration and to incorporate different data feeds. In addition, some changes were required due to nuances in the types of financial products being offered. Many of these changes were included as standard in subsequent releases of the system.

Primary data collection was achieved through semi-structured interviews at both vendor and client sites with question guides formulated from the theoretical constructs previously described. This approach allowed the flexibility to pursue new topics as the discussion evolves (Punch 2005). Our sampling strategy for data collection involved interviewing a diverse range of stakeholders (Silverman 2001). Consequently, our sample consisted of two senior systems implementation consultants working for the IMS at each of the vendor sites and one senior client relationship manager responsible for the relationship between the IMS vendor and the two AMH. This was especially insightful as collectively they had much experience over many instances of the system's implementation. Within one of the two AMH a senior compliance and risk manager were interviewed and in the other a senior IT manager and compliance executive were interviewed. This research represents the first phase of a larger study addressing institutionalism and compliance management. 10 interviews were conducted, spanning approximately 18 hours. Interviewees were re-contacted during transcription and analysis in order to provide clarification on key issues. Secondary data was collected from systems manuals, firm's annual reports, websites, emails and sales and marketing literature. External data analysed included the Financial Services Authority handbook and industry reports on regulatory practices. Scope, depth and consistency were achieved by discussing key concepts, constructs and terminology with each of the informants and triangulating the findings across primary secondary and external data sources (Flick 1998; Seale 1999).

The study aims to provide insights from theoretical statements on institutional carriers to empirical statements provided by practitioners functioning within the Asset Management sector (Lee and Baskerville 2003). Lee and Baskerville (2003) suggest that the generalization of a theory to a new setting is can be achieved by making a comparison of what the theory would describe and what is actually observed. To this end, our results will be compared against Table 2 to understand which elements of institutional carriers are evident and how each of the elements observed relate to Scott's pillars, described in Table 1. The following sections review the empirical findings of the research in relation to the theoretical constructs previously outlined. Each of Scott's (2003; 2008) institutional carriers, as outlined in Table 2, will be considered in turn.

## 6 Symbolic Systems

Table 2 suggests that if the Regulative pillar is present then institutional carriers may take the form of laws and regulations. Clearly, a compliance system will have a focus on legislation. As one senior implementation consultant for the IMS vendor noted, *"Well they [the IMS's clients] may have their own consultants who help them understand the regulations and they understand how to write the rules into the IMS"* and that *"if it's an important new requirement of our client base... then the Product Manager and Advisory Committee will try to take a stab at understanding that regulation and try to write a template set of rules based on their understanding. And what that... the Product Manager would want to look and try to find some clients that would be interested in this, an advance group which will you know work with them on that."* And as one senior relationship manager for the IMS noted, *"We might work with some very strong clients to build the templates and then the clients will use them and they may modify them"*. The data showed that the IMS vendor, along with a chosen set of clients, interprets the regulations to create templates of rules to meet these requirements and by doing so explicitly institutionalizes sets of rules and tacitly institutionalizes those practices associated with operating those rules. These practices are embedded into the IMS and consequently diffused to those systems adopters who utilise the templates, thus further legitimizing the practices through mass adoption. However, these rules and practices may still be modified by systems adopters, but if changes are made they are likely to be moderate. As noted by the IMS's relationship manager, *"These [rules] are out the box and what clients will do is look at the rules and then say, 'No we don't quite do it that way because our definitions are slightly different.' But the concept is there"*.

The templates represent the codification and abstraction of specific practices into a useable model. Specifically, the IMS allows the categorization of practices represented as rules in order to assist with the management of a large number of similarly focused requirements. As rules relate to specific regulatory requirements and the IMS has prebuilt categories for them, there exists an underlying organizational pattern or schema to the predefined templates which in turn represent examples of solutions to typical regulatory issues. These templates may help cognitively shape and frame views on how areas of compliance should be implemented and managed by IMS adopters. Although the research shows that implementers of the system may slightly alter the rules to match their specific business environment, the system allows the diffusion of solutions to regulatory compliance which must then be cognitively translated and applied to the users' specific context, thereby providing a hybrid combination of local structures and ideas derived from previous experience. This phenomenon is termed Bricolage by Scott (2008). Furthermore, these prescriptive rules and templates are also defined within the IMS system's user manual and release notes, thereby providing a further method of diffusion.

Symbolic systems related to the Normative pillar include values, expectations and standards. Consequently, the interviews focused on understanding how IMS may be a carrier of such phenomena. The research suggests that AMH now perceive same-day compliance measurements, increased investor confidence, and the ability to maintain consistent investment strategies guided by automated compliance policies as critical for winning new clients. As one senior compliance manager noted, *"The next stage for any client is, 'Okay, so you can provide the returns, how do I know you're gonna do it with a minimum amount of risk and issues and pain, for me as a client? A proper functioning IMS may help reassure them"* and that *"My standard pack of slides has got four*

*slides on [IMS compliance] and I give that to all clients. Now I either present them as the clients comes in regularly to do due diligence or in the marketing and sales process. Any client that wants to see me in the investment process, they get a half hour chat on [IMS compliance].* Another compliance manager in a different firm observed, *“We recently won £200 million new business because we had introduced the IMS. Our clients, particularly the large institutional investors, are very savvy about IT systems. They are investing millions of dollars in pension funds so they don’t want to see another corporate financial scandal”*. This suggests that embedded in the system is the capacity to meet common client expectations and so the IMS acts to carry, reinforce and institutionalise the values the AMH perceive their clients to hold and the standards clients expect from their investment firms. Consequently, the IMS acts to legitimize the AMH in the eyes of the investors.

## 7 Relational Systems

A chief focus of the IMS’s compliance module is to sanction and monitor transactions undertaken by participants operating within AMH. The IMS has a workflow monitoring function, which according to the IMS compliance user manual, *“can be used for any user-defined surveillance task, such as alerts, warnings, trade status, compliance tests”*. The research suggests that the IMS may be viewed as a system of governance, which creates and enforces norms and rules created by regulatory authorities. This view encompasses both the normative and regulative pillars as mutually reinforcing. The regulative pillar’s coercive power is legitimized through normative frameworks that support and constrain the use of power and so authorizes individuals within the firm to take specific actions. As a compliance executive noted, *“If you’ve got a compliance breach out there in Brazil, then who can take ownership for that. Where is the central nervous system for compliance offices? We have them in each location. The rules are set up, the overriding control is happening here in London. But you’ve got people in Brazil who have got the authority to say, “Ah, go to London, aaargh clearly they are asleep, I won’t wake them up, I will allow this breach to go through or I will sort of do what I have to do”, because the local area doesn’t have the knowledge or the authority to so act.”* Consequently, the IMS implements a system of authority which allows the firm to function globally and ensures the correct handling of compliance breaches.

Correspondingly, the system provides functionality for conducting and governing "four-eye" tests. This refers to the requirement for at least two people to review an approach. As the IMS compliance module’s user guide notes, *“The creation and modification of compliance tests, particularly tests written to adhere to regulatory rules, requires increasing emphasis on oversight. To that end, [IMS Vendor] offers “four-eye” compliance test approval process that includes user privileges and an independent test history, or audit trail.”* Thus, the system acts as an institutional carrier by facilitating established methods of governance required by regulatory authorities. The fact that the system is structured to incorporate this practice further legitimizes four-eye tests as a governance practice.

The research also revealed that networks of subject matter experts communicate both internally across global divisions and externally across firms to establish how specific regulatory issues are being tackled and to share approaches and practices. A consensus towards approaches and best practice which are derived from such networks facilitates similar configurations of the IMS compliance module and consequently may create homogenous structural models. This phenomenon is termed structural isomorphism by institutionalists.

Internally, AMH were found to share practices and approaches for using the IMS compliance module to meet similar regulatory requirements. As one compliance manager noted, *“We do talk to one another, you know around the world. I kind of expect, on a daily basis, a call from New York, Hong Kong or Singapore or you know one of the other offices. So, there is a lot of sort of knowledge sharing, adopting best practices. You know, something that you might pick up in Tokyo that we might adopt as a house policy in London. We might say, okay, no short selling you know we’ll adopt that in London as a best practice”*. The research found that knowledge was also shared externally, that different AMH would often jointly attend meetings, often facilitated by consultants or legal experts, to discuss approaches for solving contemporary issues. A compliance manager recalls the practices adopted when the Markets in Financial Instruments Directive (MiFID) was being implemented,



*“Everyone will have slightly different interpretations on what it actually means a lot of it is discussion groups and forums and MiFID... When we worked with a company called [investment consultants], and they had a MiFID working group, which basically, all your Project Managers and the people who are involved in MiFID projects, meeting up and saying to your peers at [AMH], all of these different fund management companies and saying, “How are you doing this? Are you using [IMS] system “Yeah, we’re looking... we’ve focused on that and we’re gonna do this.” “Oh, that’s not a bad idea. We don’t really trade that instrument, but we trade these instead, which are very similar, so we’re gonna do this for this instrument and this for...” And twenty clients sitting round a table and talk about how they’re all gonna approach it.” Again, we can see that understanding the impact of a regulation on each firm requires a process of sense-making and cognitive framing and that during these meetings insight into regulatory requirements was constructed socially amongst stakeholders.*

The research also revealed that adopters of the IMS, in competing AMH, had set up communities of practice to discuss ways in which the system was being used to tackle regulatory issues. A compliance executive and regular attendee at these forums advised, *“You know we have one [forum] for [IMS vendor] compliance where we meet every few months with other firms in the City who use [IMS vendor]. You know, I mean we talk about sort of issues and implementations, including testing and configuration.”* Our findings show that across all these forums, whether they are internal across global divisions, or facilitated by third parties or externally across systems adopters, the ideas and views on best practice were disseminated, contributing to structural isomorphism. Thus, the IMS system acts as a conduit for this diffusion.

## 8 Routines

The IMS’s compliance module allows for the monitoring of workflows and, according to the IMS compliance user manual, *“alerts the appropriate personnel of user-defined events or data of interest”*. For workflows or business processes to be effectively monitored the IMS must make clear assumptions, in its design, as to the broad type and structure of the tasks or routines being surveilled. Whilst the system does allow for the user to define the occurrences that are reported and which may subsequently require approval, the assumption is that surveillance controls are necessary and that associated alerts and approvals processes will be required. One senior IT Manager for one of the AMH described the process of changing workflows and running User Acceptance Tests (UAT), *“So, the existing workflow would be the optimum but what people do in their UAT is they log into a test environment and... but they would replicate what they do every day in their normal job, and just make sure, you know, that the compliance checks are working. And they can pick up the order from the fund manager okay. If an order requires a second authorisation, that the order flows through to the second authoriser’s tray blotter. Then that second authoriser can pick up the trade from his blotter, authorise it and then it flows through to the dealers. So then the dealers, you know in UAT process, you know they’re compliant.”* His view is illustrative of how the system acts as a carrier of institutionalized patterns of behaviour, relating to meeting regulatory obligations through standardized operating procedures. Furthermore, the IMS has protocols and operating procedures built into the systems such as the regulatory templates previously described. The research highlighted that the routines built into the IMS require specific data to be able to operate and thus the IMS acts to institutionalize not just the types of data required but also the structure of such data. As one senior implementation consultant for the IMS noted, *“What we find when we, go to implementation is one of the first things is looking at the data requirements for each of the rules. You know and making sure that the organisation has that data, you’ll find that in almost every implementation, you’ll find that there may be roughly twenty or thirty thousand data exceptions. Then you can’t run something, you start to realise that the business just doesn’t have the data that they need to run those rules, so you have to incorporate the new data into the processes”*.

The study found that the system also acted to structure, determine and legitimize roles within the organization and what tasks were appropriate to which users. A senior implementation consultant noted that, *“In terms of monitoring, I think [the business process] changes [as new regulatory requirements become apparent]... clients have to change the workflow of the compliance person for it to be able to support the business people. I’ve seen a situation where the clients have wanted to give*

*the Fund Managers the ability to override violations. Normally we wouldn't do that...*" This is illustrative of how the IMS may be reconfigured to support the routines required by business users. The system should act to segregate the duties of business and compliance operators and thereby acts to define their roles within the organization. Where established roles are not being adhered to, in the case of the fund manager wanting to override violations, there exists a conflict. Furthermore, the surveillance aspect of the system, previously described, acts to ensure employees' obedience and conformity to their ascribed duties. Consequently, the IMS act as an institutional carrier for norms associated with jobs and roles which are in turn required to meet regulatory requirements, such as the FSA's (FSA 2010b) requirement that firms, *"should segregate the duties of individuals and departments in such a way as to reduce opportunities for financial crime or contravention of requirements and standards under the regulatory system"*.

Scott (2008) notes that routines may be learned, sustained and renewed by relational systems and that the power and attraction of communities of practice is their ability to share routines within which is embedded the tacit knowledge of the actors who structure and operate the routines or scripts being shared. In the context of this research, the communities of practice set up by adopters of the IMS to share issues and approaches allow the process of learning to be extended beyond the confines of a single Asset Management firm and thereby the IMS user community can benefit from the tacit knowledge of the other professionals faced with similar challenges in their roles. However, Oxley (1999) suggests this learning comes at a price. Where participants may benefit from the acquisition of the 'sticky' knowledge embeded within other AMH, this benefit must be balanced against the 'leakage' of their own proprietary knowledge. The fact that AMH are happy to meet with their competitors to discuss approaches to utilize the system suggests that compliance is not seen as a source of competitive advantage. Many of the interviewees concurred suggesting that the firms compete on the investment side of the business, with compliance being seen as *"necessary but non-value adding"*. One senior compliance executive commented, *"You don't hand over a copy of your entire final page compliance manual, cause you're not silly, but what you do, do is happily discuss how people are approaching certain legislative changes or implementing certain rules"*. If through remaining compliant, a competitive advantage is not gleaned then perhaps the value of a successful compliance function is in legitimizing the organization by meeting its regulatory obligations in the eyes of its stakeholders, such as its clients and regulator. However, there was a discerning voice. A senior risk executive suggested that an experienced and effective compliance function working together with their risk department could potentially allow them to be first to market with a new financial product and thereby, provide a first mover advantage.

## 9 Artefacts

The IMS software, its associated databases and data feeds, as well as the hardware on which it runs and the manuals and training materials which accompany it may all be considered instances of an artefact produced and transformed by human activity through a physical or cultural environment (Suchman and Edelman 1996). Orlikowski (1992 p.84) and Giddens (1984) advise that artefacts may be seen as products of human action but that once deployed may be seen as part of the, *"objective, structural properties of the situation"*. This is a perspective often obscured, as there is a separation between those who design the system, in our study the IMS vendor and those who use it, the AMH. However, Orlikowski (1992) advises that while the initial development of a technology may require a greater engagement of human agents, the on-going possibility that users will socially and physically change the system should not be ignored. This was observed in our study where rival AMH met to discuss issues relating to their common adoption of the same IMS. These forums allowed the users to not only share experiences regarding the IMS but also to act as a collective voice to lobby the IMS vendor to make the changes they would like to see. In this way, new approaches and practices were socially constructed by members of the same culture and consequently these practices became embed and so institutionalized within the IMS.

The IMS system may be seen as being a carrier of regulatory mandated specifications. Indeed the on-going requirement that firms adhere to these mandates is the *raison d'être* for the system's compliance module. However, beyond this macro view the IMS also complies with mandated specifications. The

IMS's relationship manager noted, *"And [the] compliance [module] also now has their article UCITS inbuilt which are these regulatory compliance rules which allow you to very quickly and easily look at buying SWAPS or particular variations and make sure you that comply and you can say that you are UCITS III or UCITS IV compliant and for that you have to have all these regulatory rules wrapped into your compliance checks to be able to trade UCIT funds"*. While a senior compliance manager for noted that, *"We run a lot of UCITS funds. We have actually got seven libraries coded in [IMS] for UCITS. UCITS is supposed to harmonise regulation across Europe the fund industry"*. Clearly, the IMS is acting as a conduit for industry related standards and so is acting as a carrier for such institutions to further their legitimization.

The FSA (2010a) requires that, *"A firm must take reasonable care to establish and maintain such systems and controls as are appropriate to its business"* The research found that the IMS is careful to ensure that the system utilises and meets norms relating to technical standards. The IMS's relationship manager stated, *"What wins business isn't just do can-do compliance, it's also how it integrates, how the workflow would impact and influence existing workflows, and how it will integrate with other database systems, and so on and so forth. So you've got just compliance systems out there which have sold and are being replaced by [IMS vendor], because not that they are poor systems, it's because they don't integrate with the workflow and data"* and that the IMS vendor, *"no longer support[s] Sybase as Sybase has stopped developing but now Sequel Servers and Oracle are the two main tools that we support"*. Thus, the IMS acts as a conduit for the institutionalised requirement that systems and controls be appropriate through the adoption of appropriate technical standards.

Lastly, the cultural-cognitive perspective of artefacts as institutional carriers suggests how they might actualise and personify constellations of ideas. The research found that the IMS has the ability to symbolically represent various media. The IMS relationship manger advises that, *"Basically, you can bring into this screen whatever you want. You can have Excel, you can have TV, you can interface with absolutely everything."* In this way, the IMS allows the compliance professional to coagulate and frame the different strands of information, which are required to enable their role in the organization.

## 10 Conclusions and Future Research

Firstly, it is worth noting that our findings do not purport to investigate the entire process of institutionalization but instead, the part of the process broadly termed 'objectification' by Tolbert and Zucker (1996) and 'legitimation' by Currie (2004). That is the part of the process where the underlying rationale of the institution is developed, tested, refined, and propagated and consequently, where social consensus is formed. It is conceded that for a practice to become truly institutionalized it will have to be accepted and adopted beyond the user community of one AIS. As Scott (2003 p.1) advises, *"...carriers are not neutral vehicles, but mechanisms that significantly influence the nature of the elements they transmit and the reception they receive"*. It is this reception that allows the institution to further develop to the state of 'sedimentation' which is, *"... characterized both by the virtually complete spread of structures across the group of actors theorized as appropriate adopters, and by the perpetuation of structures over a lengthy period of time"* (Tolbert and Zucker 1996 p.184). However, the study revealed that practices which had reached the 'sedimentation' process were also present and being 'carried' by the AIS. Examples include the four-eye tests and the segregation of duties.

The research demonstrates how the different types of institutional carriers and their association with different institutional pillars are in many ways intertwined and mutually reinforcing. For example, the research identified the practice of systems adopters meeting to discuss the IMS. This phenomenon was found to be relevant to the routines, artefacts and relational carrier, while the routines carrier may be viewed as addressing the compliance focused activities around which the other carriers are built.

The research findings indicate that elements of the three regulatory pillars were found in all four institutional carriers, as each of the elements outlined in Table 2 were manifest to some degree and that while the regulatory pillar was perhaps the most explicit, perhaps due to the context of the study, the normative and cultural-cognitive pillars were also found to be significantly present. This is a key finding, as the presence and interdependence of each institutional pillar suggests the context of AIS

and its role in meeting regulatory obligations may provide a rich and fertile setting from which to derive future research aimed at advancing institutionalism from a theoretical perspective. The presence of each Scott's pillars suggests it is appropriate to apply institutional concepts such as 'Structural Isomorphism' and 'Bricolage'. In addition, the presence of all three pillars and the use of AIS as a conduit for the legitimization of regulatory practices through coercive, cognitive and normative mechanisms may help regulators and system vendors to better define strategies to achieve the acceptance of new approaches.

The study also was useful in identifying areas of future research from which practitioners may benefit, not least, in exploring the ways in which investment in regulatory compliance may provide a strategic advantage or in confirming the predominate view that compliance is a non-strategic function providing little or no competitive advantage. The presence of 'Structural Isomorphism' is an important finding from both a compliance vendor and systems user perspective. If AIS systems are conduits of best practice and so act to create homogeneity, then future upgrades of compliance focused systems may leverage commonalities across organizations to further standardize compliance practices and so reduce associated investment. The development of effective inbuilt templates and processes which provide a strong return on investment may provide a software vendor competitive advantages over rival software firms. However, the presence of Bricolage suggests that any such generic compliance frameworks which may be applied across similar organizations will have to be appropriately high-level, so that they can be refined for each adopter's business environment while being detailed enough to still be valuable.

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