



Solvency II: Asset data challenges

Prepared by:

Chris Johnson
Senior Product Manager, Market Data Services
HSBC Securities Services

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Global Banking and Markets

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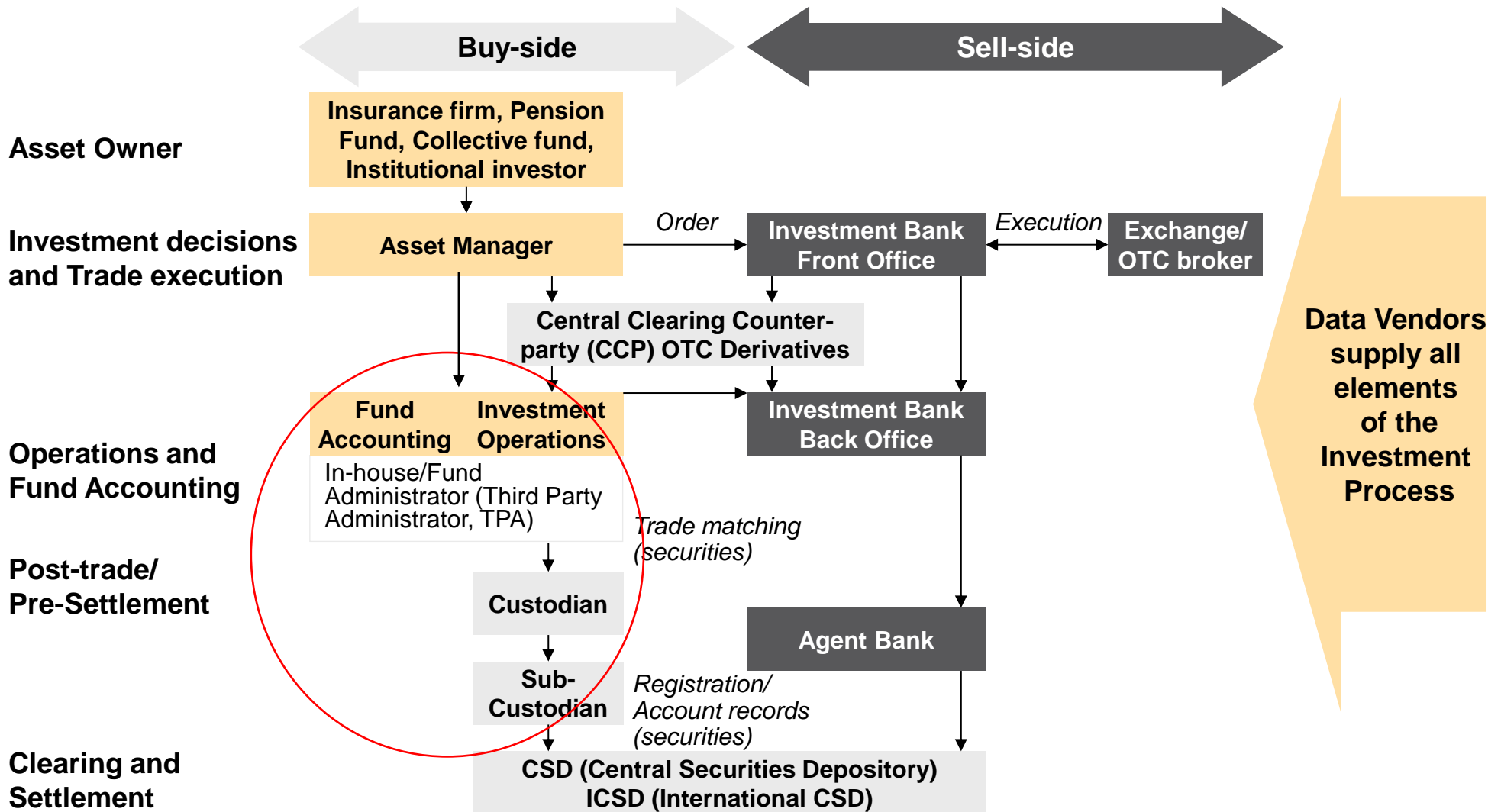
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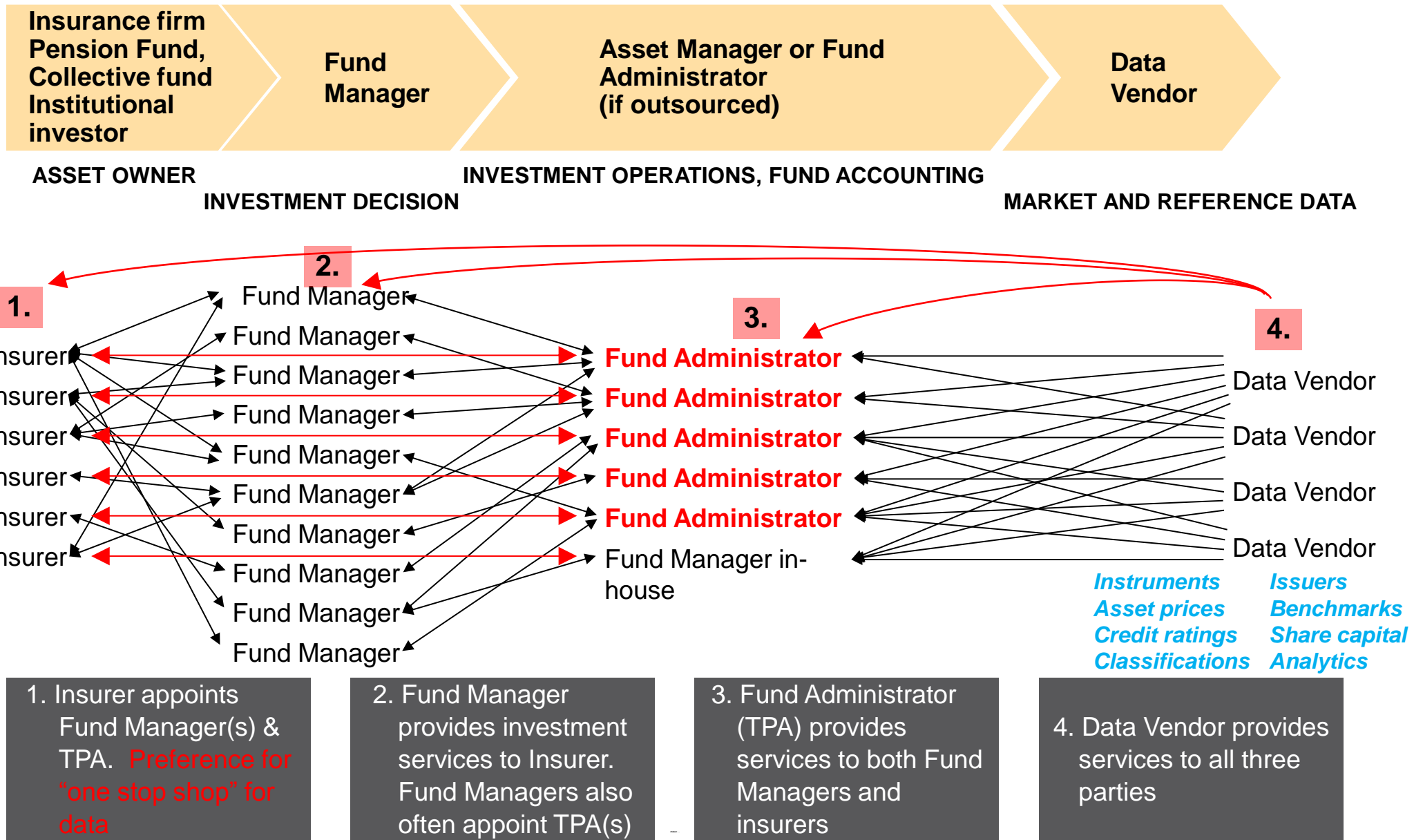
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The role of TPAs in the investment process and how they are supporting Solvency II asset data reporting

Overview of the investment process – high level



The role of TPAs in the investment process



Data requirements in the context of other regulations

Which types of data are impacted?		Instrument		Entity		Credit Rating	Asset Type	Look through	Pricing		Index
		Quoted	OTC deriv	Counter-party	Issuer				Quoted	OTC deriv	
Dodd Frank Act (DFA)	Systemic	-	High	High	-	-	-	-	-	-	-
	Form PF	High	High	High	Low	High	High	Low	-	-	-
	CCP ¹	-	High	High	-	-	-	-	-	High	-
EMIR ¹		-	High	High	-	-	-	-	-	High	-
CRD IV		-	-	-	-	-	-	-	-	High	-
FATCA		High	High	High	High	-	-	Med	-	-	-
FTT		High	High	High	High	-	Med	-	-	-	-
MiFID 2/MiFIR		Med	Med	Med	-	-	High	-	High	Med	-
UCITS IV/V		Low	Low	Low	Low	Low	High	Low	High	High	-
AIFMD		High	High	High	Low	High	High	Low	High	High	-
Solvency II		High	High	Med	High	High	High	High	High	High	-
Benchmark (EC)		-	-	-	-	-	-	-	-	-	High

¹ Also expected to apply to Central Counterparties in Hong Kong, Japan, Singapore and Australia

- Extensive crossover of business impacts across the regulations
- With lead times of 12+ months for data vendors all items are urgent

Note: Initial interpretation based on consultation papers and regulatory updates

Key: High Impact Medium impact
Low impact No impact

Ten new regulatory data fields – cross-regulation summary

Which new data fields will be needed?	Instrument		Entity Counter-party	Look Through	Classifications			Pricing: OTC deriv
	Quoted	OTC deriv			Asset Type	Industrial	Valuation	
DFA CCP	-	USI	UCI/LEI	-	UPI (U.S.)	-	-	CCP
EMIR	-	UTI	UCI/LEI	-	UPI (EU)	-	-	CCP
FATCA	Tax Flag	Tax Flag	TIN/GIIN	LT	-	-	-	-
Financial Trans. Tax	Tax Flag	Tax Flag	-	-	-	-	-	-
Solvency II	-	-	LEI	LT	CIC	NACE	AVM	-
Existing standards	ISIN	-	BIC	-	CFI	ICB/GICS	IFRS	-

Key					
AVM	Alternative valuation methods	ISIN	ISO 6166	UCI	Unique Counterparty Identifier
BIC	ISO 9362	LEI	Legal Entity ISO 17442	UPI (U.S.)	Unique Product Identifier D-F
CCP	Central Counterparty Price	LT	Look through fund of funds	UPI (EU)	Unique Product Identifier EMIR
CFI	ISO 10962	NACE	Classification Secteur Industriel	USI/UTI	Unique Swap/Transaction Identifier
CIC	Complementary Identification Code	TIN/GIIN	IRS Tax ID number and Global Intermediary ID	Tax Flag	U.S. Source (FATCA) and Financial Transaction (FTT)
IFRS	IFRS7/FAS157 price type	GICS	Global Industry Classification Standard	-	No known new field at this stage

Note: Initial interpretation based on consultation papers and regulatory updates

What new reference data is needed for Solvency II

Which new data fields will be needed?		Entity Counter-party	Look Through	Classifications		
				Asset Type	Industrial	Valuation
Solvency II		LEI	LT	CIC	NACE	AVM

	Type	Data type	Explanation	Length	Source from?
CIC	Complementary Identification Code	Asset classification	The CIC is intended to assess the risk of an asset based on EIOPA's guidelines. The asset owner is accountable for the CIC and must be able to explain their rationale.	4 chars	Data Vendors can supply "indicative" CIC
NACE	Classification Secteur Industriel	Industrial classification	Originally a French regulatory industrial sector classification code	6 chars	Data Vendors can supply NACE
AVM	Alternative valuation methods	Valuation type classification	EIOPA's definition of AVM is different from IFRS7/FAS157 Levels 1, 2 and 3	3 chars	Each firm and vendor to create new classification
LT	Look through fund of funds	Instrument	Granular line-by-line details of underlying holdings might be required by 2015/2016	Extensive information	No universal source at present
LEI	Legal Entity ISO 17442	Entity	Required for the issuer, issuer group, counterparty and counterparty group (for the group's subsidiaries/members)	20 chars	Each entity needs recertify their LEI annually even if a third party has created it for them

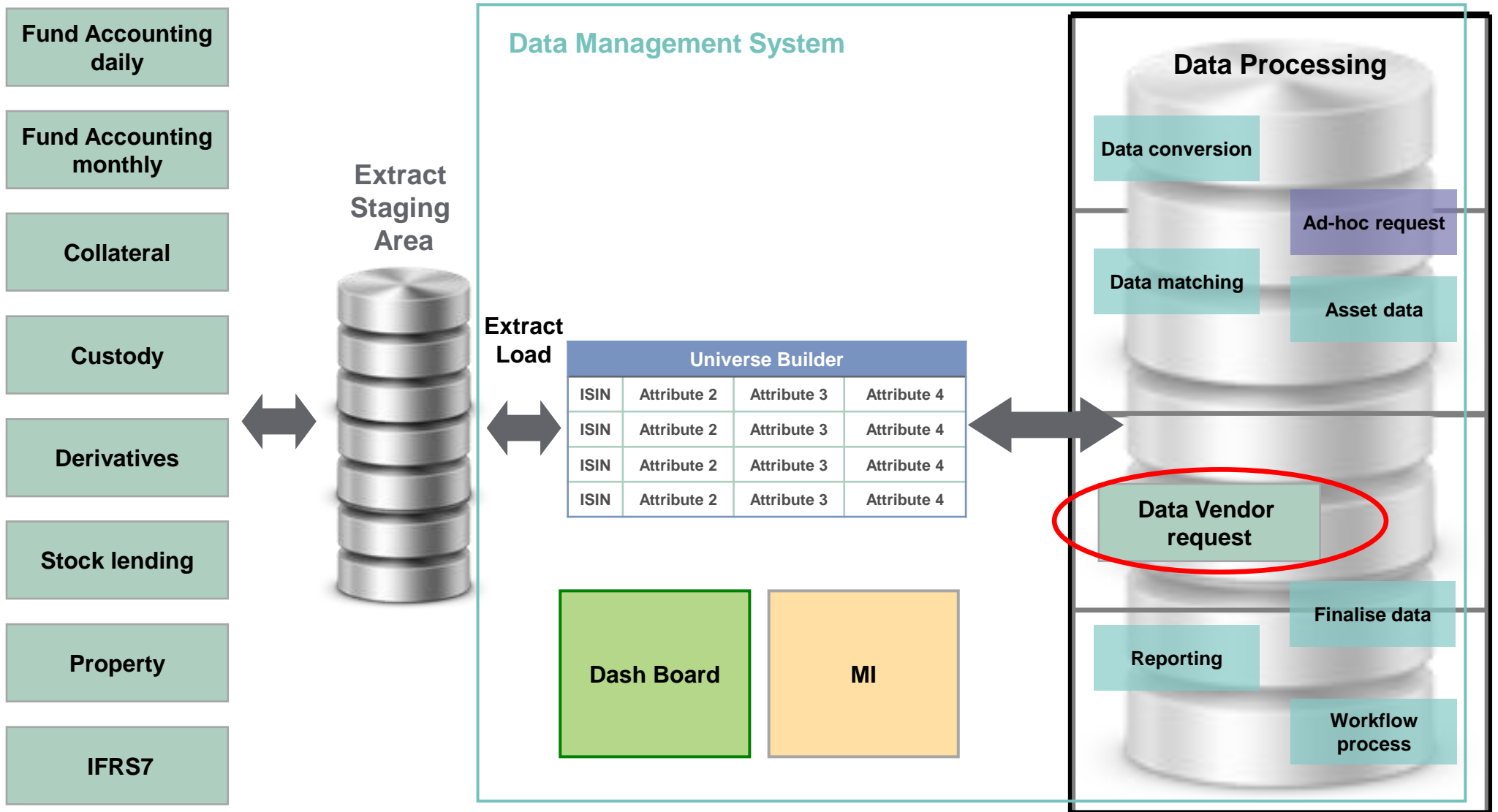
Data content availability from market vendors (Vendor self assessment)

This table illustrates the data vendors' perspective of readiness for Solvency II through "self assessment" as part of a formal RFP process carried out by HSBC Securities Services in Q1 2012

Type	Fields	Coverage based upon Vendor response					
		Vendor 1	Vendor 2	Vendor 3	Vendor 4	Vendor 5	Vendor 6
Instrument	Currency (ISO), Maturity date, Identifier, Sec/Contract, Name, Strike, Duration, Underlying, Trigger value, Dividends, Interest, Contract Dimension	70%-84.99%	70%-84.99%	85%-100%	70%-84.99%	Under 70%	Under 70%
Geographic	Issuer country, Geographical zone of issue	70%-84.99%	Under 70%	70%-84.99%	Under 70%	85%-100%	70%-84.99%
Classifications	Issuer Sector	70%-84.99%	70%-84.99%	70%-84.99%	70%-84.99%	Under 70%	70%-84.99%
Income	Dividends, Interest	85%-100%	85%-100%	85%-100%	85%-100%	Under 70%	85%-100%
Valuation	Accrued Interest, Valuation Method	85%-100%	85%-100%	85%-100%	Under 70%	85%-100%	Under 70%
Risk	Delta, Risk Factors	70%-84.99%	Under 70%	Under 70%	Under 70%	Not available	Under 70%
Structured	Attachment point, Detachment point, VAR, Synthetic struc, Prepayment struct, Asset type, Capital Protection, Callable or Putable, FAR, Loss given default, U/L	70%-84.99%	70%-84.99%	70%-84.99%	Under 70%	Under 70%	Under 70%
Issuer	Counterparty, Counterparty Group, Issuer, Issuer Group	70%-84.99%	85%-100%	85%-100%	85%-100%	Under 70%	Under 70%
Credit Ratings	External Rating, Rating Agency	85%-100%	85%-100%	85%-100%	85%-100%	85%-100%	70%-84.99%
Collateral	Asset type, Counterparty, Counterparty Group	Under 70%	Under 70%	85%-100%	Not available	Under 70%	Not available

Key: 85%-100% 70%-84.99% Under 70% Not available

Where can the Solvency II asset data content be sourced from?



NACE industrial classification

Current state	New content required	Key Gap	Next step
<ul style="list-style-type: none"> ICB, GICS and other industry classifications are already available. 	<ul style="list-style-type: none"> NACE industrial classification. This is not widely recognised. 	<ul style="list-style-type: none"> NACE was mentioned in July 2012 Draft QRTs but EIOPA originally indicated they will allow alternatives. However interim measure reports <u>require</u> NACE with no alternatives offered. 	<ul style="list-style-type: none"> Data vendors are planning to provide NACE, but commercial discussion required on costs compare to the existing types.

Section J : Financial intermediation

- 65 : Financial intermediation, except insurance and pension funding
 - 65.1 : Monetary intermediation
 - 65.11 : Central banking
 - 65.12 : Other monetary intermediation
 - 65.2 : Other financial intermediation
 - 65.21 : Financial leasing
 - 65.22 : Other credit granting
 - 65.23 : Other financial intermediation n.e.c.
- 66 : Insurance and pension funding, except compulsory social security
 - 66.0 : Insurance and pension funding, except compulsory social security
 - 66.01 : Life insurance
 - 66.02 : Pension funding
 - 66.03 : Non-life insurance
- 67 : Activities auxiliary to financial intermediation
 - 67.1 : Activities auxiliary to financial intermediation, except insurance and pension funding
 - 67.11 : Administration of financial markets
 - 67.12 : Security broking and fund management

EXTRACT EXAMPLE OF NACE CLASSIFICATION STRUCTURE

CIC (Complementary Identification Code)

Current state	New content required	Key Gap	Next step
<ul style="list-style-type: none"> Does not exist – a new asset classification, defined by EIOPA, designed to measure type of risk for each asset that an undertaking has invested in Some data vendors are already supporting CIC 	<ul style="list-style-type: none"> EIOPA's stated intention is for CIC to represent Insurer's self-assessment of investment risk of assets. So CIC can be specific to (and can be different for) each insurer If asset aggregation using CIC is introduced, to reduce look through, a rigorous industry standard version would become necessary 	<ul style="list-style-type: none"> Data vendor's CIC can only be treated as "indicative CIC" because there is no unique standard version (Insurers are responsible for CIC accuracy) CIC accuracy becomes materially important if aggregation is permitted at SCR Pillar 1 level 	<ul style="list-style-type: none"> Clarification needed from FSA, EIOPA, EC whether CIC is <ol style="list-style-type: none"> standardised, with single numbering agent, high quality, unique and suitable for risk aggregation Purely for each insurers to use as risk assessment tool for investments in compliance with Insurer's outsourcing obligations

First 2 positions	Asset listed in	ISO 3166-1-alpha-2 country code or XL (for not listed) or XT (for not exchange tradeable)				
Third position	Category	1	2	3	4	5
		Government bonds	Corporate bonds	Equity	Investment funds	Structured notes
Fourth position	Sub-category or main risk	1	1	1	1	1
		Central Government bonds	Common bonds	Common equity	Equity funds	Equity risk
		2	2	2	2	2
		Supra-national bonds	Convertible bonds	Equity of real estate	Debt funds	Interest rate risk
		3	3	3	3	3
		Regional government bonds	Commercial paper	Equity rights	Money market funds	Currency risk
		4	4	4	4	4
		Municipal government bonds	Money market instruments	Preferred equity	Asset allocation funds	Credit risk
5	5		5	5		
Treasury bonds	Hybrid bonds		Real estate funds	Real estate risk		

Sample extract of CIC code guidelines

Valuation type classifications overview

	<i>IFRS 13</i>	<i>Solvency II</i>	<i>FRS102 (UK GAAP)</i>	<i>IMA SORP</i>
<i>Quoted prices for identical instruments in active markets</i>	<i>Level 1</i>	<i>Level 1</i>	<i>Level 1</i>	<i>Level 1</i>
<i>Recent transactions for identical instruments</i>	<i>Level 2</i>	<i>Level 2</i>	<i>Level 2</i>	<i>Level 2</i>
<i>Quoted prices for similar instruments in active markets</i>			<i>Level 3</i>	
<i>Quoted prices for similar instruments in inactive markets</i>	<i>Level 3</i>	<i>Level 3</i>		<i>Level 3</i>
<i>Other observable inputs</i>			<i>Level 3</i>	
<i>Unobservable inputs</i>	<i>Level 3</i>	<i>Level 3</i>		<i>Level 3</i>

Source: IMA

Valuation types. IFRS 13 vs Solvency II AVM: where is the disconnect?

IFRS 13 (also very similar to FAS157)		Solvency II	
		D2	D1
Level 1 inputs	Level 1 inputs are quoted prices in active markets for identical assets or liabilities that the entity can access at the measurement date	Mark to market	Quoted market price in active markets for the same assets: QMP i. Undertakings must use quoted market prices in active markets for the same assets or liabilities as the default valuation method, notwithstanding if the applicable IFRSs would allow a different approach.
Level 2 inputs	Level 2 inputs are inputs other than quoted market prices included within Level 1 that are observable for the asset or liability, either directly or indirectly . <ul style="list-style-type: none"> • quoted prices for similar assets or liabilities in active markets • quoted prices for identical or similar assets or liabilities in markets that are not active • inputs other than quoted prices that are observable for the asset or liability, for example <ul style="list-style-type: none"> • interest rates and yield curves observable at commonly quoted intervals; implied volatilities; credit spreads • inputs that are derived principally from or corroborated by observable market data by correlation or other means ('market-corroborated inputs'). 	Mark to market	Alternative valuation method - quoted market price in active markets for similar assets: QMPS ii. Where the use of quoted market prices for the same assets or liabilities is not possible, quoted market prices in active markets for similar assets and liabilities with adjustments to reflect differences shall be used.
Level 3 inputs	Level 3 inputs are unobservable inputs for the asset or liability. <ul style="list-style-type: none"> • Unobservable inputs are used to measure fair value to the extent that relevant observable inputs are not available, thereby allowing for situations in which there is little, if any, market activity for the asset or liability at the measurement date. 	Mark to model	Alternative valuation method - other alternative valuation methods: AVM iii. If there are no quoted market prices in active markets available , undertakings should use mark-to-model techniques, which is any alternative valuation technique that has to be benchmarked, extrapolated or otherwise calculated as far as possible from a market input have to make maximum use of relevant observable inputs and market inputs and rely as little as possible on undertaking-specific inputs, minimising the use of unobservable inputs. iv. Undertakings have to make maximum use of relevant observable inputs and market inputs and rely as little as possible on undertaking-specific inputs, minimising the use of unobservable inputs.

Existing Insurance reporting uses these three categories

Solvency II will require a sub-division of Level 2 (e.g. OTC derivatives would fall under AVM). Question: Should Central Counterparty prices be treated as QMPS instead of AVM?

These differences were raised to EIOPA by the PRA in September 2013

Look Through Data Exchange Template (continued)

Solvency II Look through Data Exchange Table
- Version 1.0 (November 2013)
 This table outlines the minimum data to facilitate SCR numbers and templates (D4) for transfer between organisations

See Definitions Tab for description/format of cells

Key	Derivatives Characteristics								Greeks				
	Name of Underlying security/Reference basket (Derivatives GDR/ADR etc)	Identifier for underlying	Identifier for underlying type	Currency of underlying	Strike Price	Currency of Strike Price	Option Type	Hedge Position	Delta (to underlying)	RHO (interest)	Gamma	Theta	Vega
Listed Securities													
Bond (i)	X	X	X	X	X	X	X	X	X	X	X	X	X
Structured Product	X	X	X	X	X	X	X	X	X	X	X	X	X
Equity	X	X	X	X	X	X	X	X	X	X	X	X	X
Exchange traded Futures	X	X	X	X	X	X	X	X	X	X	X	X	X
Exchange traded Options	X	X	X	X	X	X	X	X	X	X	X	X	X
Collective Investment	X	X	X	X	X	X	X	X	X	X	X	X	X
Exchange Traded Fund	X	X	X	X	X	X	X	X	X	X	X	X	X
Unlisted Securities													
Property	X	X	X	X	X	X	X	X	X	X	X	X	X
Structured Product	M	M	M	M	M	M	M	M	M	M	M	M	M
Loans	X	X	X	X	X	X	X	X	X	X	X	X	X
Private placement bond	X	X	X	X	X	M	X	X	X	X	X	X	X
Equity other than listed equity	X	X	X	X	X	X	X	X	X	X	X	X	X
Other investment assets not analysed	M	M	M	M	M	M	M	M	M	M	M	M	M
Commodities	X	X	X	X	X	X	X	X	X	X	X	X	X
OTC Derivatives													
Forward (Including FRA and FFX)	M	M	M	M	M	M	X	M	X	X	X	X	X
Option Put	M	M	M	M	M	M	M	M	M	M	M	M	M
Option Call	M	M	M	M	M	M	M	M	M	M	M	M	M
Swaps (ii)	M	M	M	M	M	M	M	M	X	M	X	M	X
Swaption Put + Call (iii)	M	M	M	M	M	M	M	M	M	M	M	M	M
Swaption (underlying swap)	M	M	M	M	M	M	X	M	X	M	X	M	X
OTCs others	M	M	M	M	M	M	M	M	M	M	M	M	M
Other net assets													
Cash (iv)	X	X	X	X	X	X	X	X	X	X	X	X	X
Cash equivalents	X	X	X	X	X	X	X	X	X	X	X	X	X
Borrowing	X	X	X	X	X	X	X	X	X	X	X	X	X
Other non investment Assets (v)	X	X	X	X	X	X	X	X	X	X	X	X	X
Other non investment Liabilities (vi)	X	X	X	X	X	X	X	X	X	X	X	X	X
Net asset value	X	X	X	X	X	X	X	X	X	X	X	X	X

ILLUSTRATIVE EXAMPLES OF ASSET TYPES AND NOT AN EXHAUSTIVE LIST

Notes:

- (i) Where bonds are paying interest or principal to a non-standard schedule, data will have to be provided outside this table
- For Swaps and FFX details will need to be provided for both legs of the swap
- (ii) For Swaptions the record is an option with the underlying asset a Swap for which the Swap details must also be supplied
- (iii) For Cash one line per currency of denomination
- (iv) Non-investment assets e.g. withholding tax reclaimable (often >1 year)
- (v) Non-investment liabilities e.g. capital tax payable
- (vi)

The Data Exchange Template is available on the IMA website together with field definitions.

Source: Third Party Administrators working group comprising HSS, JPM, State St, NT, Citi, BNYM and BNP Paribas, with the IMA

Solvency II Asset Data Challenges – a summary

Type	Issue	Updated as of June 2014	Next steps
Look Through	<ul style="list-style-type: none"> ➤ Large scale, high volume, complex, fast and secure turnaround of Look Through data for Solvency II does not exist today ➤ Fund Manager concerns with immediate release of constituents and weightings details ➤ Scope includes collectives, segregated, alternatives and structured transactions 	<ul style="list-style-type: none"> ➤ EIOPA has introduced a 20% threshold (by entity not group). Insurers with collectives and structured transactions below this level can use mandate method instead of Look Through ➤ The PRA has confirmed this will apply to SCR. QRTs will use aggregation as per July 2012 definitions 	<ul style="list-style-type: none"> ➤ PRA and EIOPA expect insurers below the threshold who opt for mandate to be able to explain their reasons, and to demonstrate that they know their investments ➤ Look Through could potentially be required for ECB reporting
CIC	<ul style="list-style-type: none"> ➤ EIOPA requires the CIC to represent Insurer's own assessment of investment risk of instruments ➤ An industry standard version of CIC must meet the outsourcing obligations of insurers 	<ul style="list-style-type: none"> ➤ CIC purpose spelt out clearly in the guidance as insurer's responsibility ➤ Data vendors and TPAs can provide "indicative CIC" for information provided to Insurers 	<ul style="list-style-type: none"> ➤ PRA accepts that CICs are not a standard and could differ between Insurers ➤ Insurers must take responsibility for CIC selection to meet outsourcing obligations
Valuation type	<ul style="list-style-type: none"> ➤ Mark to market or mark to model definition was expected to dovetail with existing Level 1, level 2 or Level 3 IFRS7/FAS157 definitions to prevent inventing a new classification 	<ul style="list-style-type: none"> ➤ 'Alternative valuation methods (AVM)' in the Log Files, Final template is not consistent with the existing IFRS levels 1, 2 and 3 	<ul style="list-style-type: none"> ➤ Anomaly escalated to EIOPA in Sep 2013. EC decided not to change it. ➤ OTC derivatives and non active market prices align with IFRS L3 instead of L2
Issuers	<ul style="list-style-type: none"> ➤ Issuer and Ultimate parent data content differs significantly between data vendors and needs to be cleaned up 	<ul style="list-style-type: none"> ➤ Vendors required to clean up data quality 	<ul style="list-style-type: none"> ➤ Examples raised with PRA in July 2013 and re-stated March 24th 2014. PRA understands that issuer data is inconsistent between data vendors
Classification	<ul style="list-style-type: none"> ➤ GICS has licence issues 	<ul style="list-style-type: none"> ➤ EIOPA has agreed to a simplified NACE instead 	<ul style="list-style-type: none"> ➤ Proceed with simplified NACE
Licence cost	<ul style="list-style-type: none"> ➤ Regulatory "Lite" licenses needed to prevent "windfall" costs to data vendors 	<ul style="list-style-type: none"> ➤ Cost increments must be reasonable 	<ul style="list-style-type: none"> ➤ Insurers will need to licence directly with data vendors in order to use data in SCR
Regulation of data content	<ul style="list-style-type: none"> ➤ 50% of QRT data is from vendors but data vendors are not regulated 	<ul style="list-style-type: none"> ➤ Take steps to regulate data vendors 	<ul style="list-style-type: none"> ➤ Not progressed since May 2012 EIOPA meeting

Note: References to "TPAs" means the Third Party Administrators working group comprising HSS, JPM, State St, NT, Citi, BNYM and BNP Paribas, with the IMA.

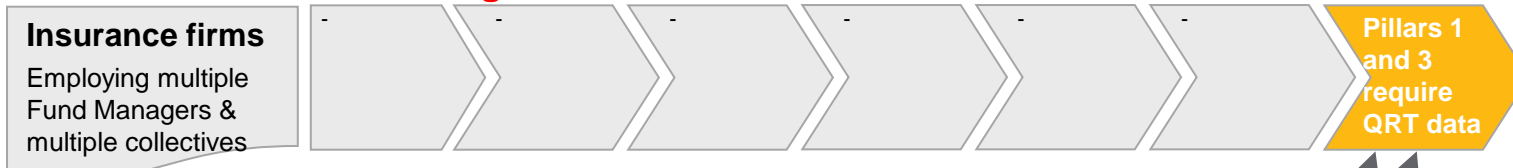
What needs to happen to make Look Through work on a large scale

Current state	New content required	Key Gap	Next step
<ul style="list-style-type: none">■ Look through exists on a small scale using spreadsheets that are released on a limited scale after the Fund Manager's embargo period■ Non standard, manual, not timely and not scalable	<ul style="list-style-type: none">■ Large scale, high volume, complex, fast and secure turnaround of Look Through data■ Some recent uncertainty that an element of aggregation might be allowed ("hierarchy of simplification") could create delays	<ul style="list-style-type: none">■ Fund Manager concerns with release of constituents and weightings details immediately after quarter end■ Lack of data vendor solutions to support the complexity, automation privacy and industrial scale strength necessary	<ul style="list-style-type: none">■ Clarification of extent of "line by line" Look Through requirement from FSA, EIOPA and EC■ Ask the data vendors what their plans are for supporting look through■ Engage with Trade Associations for Fund Managers and Insurers to bring look through requirements to a conclusion

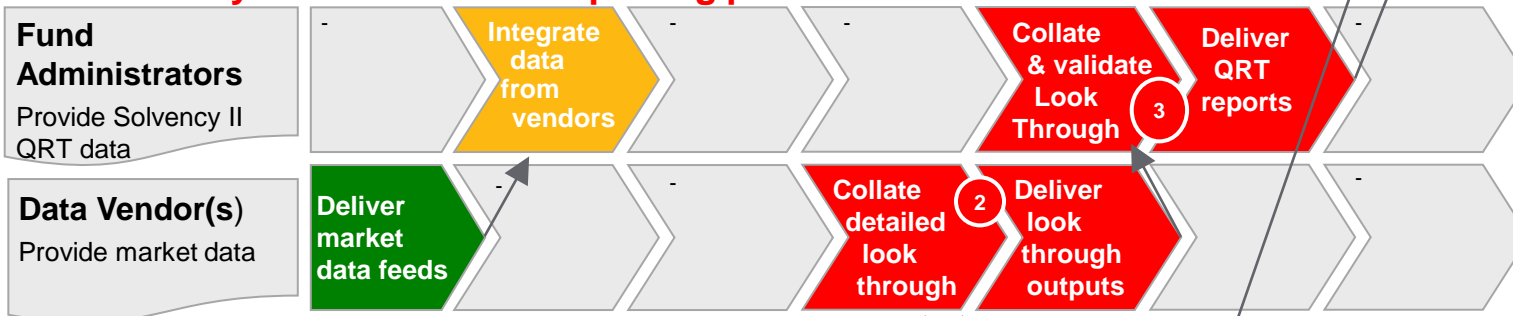


Look Through logistical challenges – An illustration

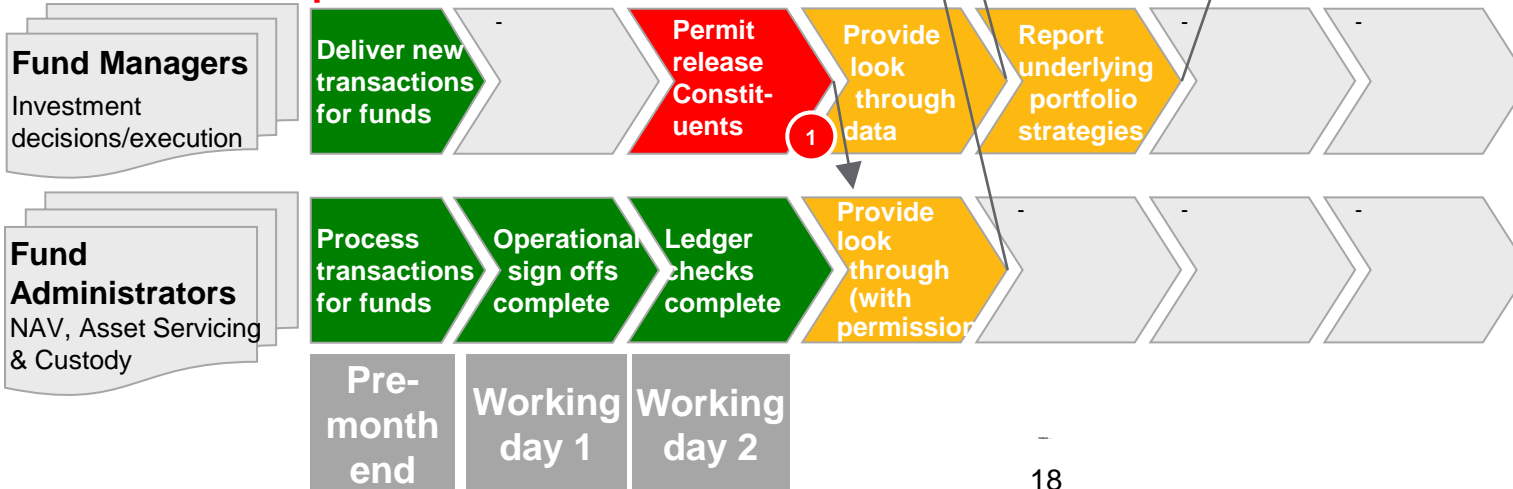
Pillar I SCR/MCR modelling



Data delivery for Pillar III QRT reporting process & Pillar I SCR/MCR



The Investment process



Key Challenges	
1	Fund Managers must permit full details of held assets to be published immediately at month end (currently released 1+ months in arrears due to intellectual property concerns)
2	Data Vendor(s) or utility must be able to collect, validate and manage permissions for Fund Managers and TPA (for funds and fund of funds) with immediate turnaround
3	TPAs must combine market data to their own outputs (e.g. NAVs, fund types & structures, holdings, OTC derivatives), validate and deliver to Insurers with immediate turnaround

Green	Existing process
Amber	Extension of process
Red x	Significant challenges: completely new processes

Insurance companies' timetables shows that they need Look Through data by Working day 2

Where are the data gaps likely to be, and how can they be filled?

	Instrument		Entity		Credit Rating	Asset Type	Look through	Pricing	
	Quoted	OTC deriv	Counter-party LEI	Issuer				Quoted	OTC deriv
Completeness	Med	High	Low	Med	Med	High	Low	High	High
Appropriateness	High	High	High	Med	High	Low	Low	Med	High
Accuracy	Med	High	High	Med	High	Low	Low	Med	High
Consistency	Low	Med	High	Low	High	Low	Low	Low	Med

Meeting the expectations of regulators

Key:

High Readiness	Medium readiness	Low readiness	No impact
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Notes:

- These measures represent a subjective industry interpretation. The ratings do not represent HSBC's business
- This is not a criticism of existing data quality which is validated by firms at "micro" level
- This slide highlights "macro" level effect of regulatory data demands which will necessitate cross-firm consistency, raised quality levels and industrial scale regulatory reporting

Complete	Widespread coverage gaps (e.g. issuers, ratings); no Look Through source
Accurate	No unique instrument or entity identifier; many content differences between data vendors
Appropriate	Incorrect assumptions that asset data exists; relevance across regulations and jurisdictions
Consistent	Relatively few data standards in existence; ISO has only scratched the surface so far

Data content challenge: Issuer data

Challenge	Obstacle	Solution?
QRT reporting and look-through accuracy requires a consistent data source	Issuer (plus parent and ultimate parent linkage) data content can differ between data vendors and could generate inconsistent reporting	Agree on a golden copy issuer source early to prevent delays and wasted clean-up effort

Company Name	Vendor A	Vendor B	Vendor C	Vendor D
Lloyds Banking Group Plc	✓	✓	✓	✓
Arkle Master Issuer				✓
Bank of Scotland Capital Funding LP	✓	✓	✓	
Bank of Scotland Plc	✓	✓	✓	✓
Bank of Scotland Private Equity	✓			
Cheltenham & Gloucester Plc	✓	✓	✓	
Clerical Medical Finance Plc	✓	✓	✓	
Clerical Medical Investment Group Ltd	✓	✓	✓	✓
Clerical Medical Managed Funds Ltd	✓	✓	✓	
Equitable Life Assurance Society/The		✓		
Invista Real Estate Investment Management Hold	✓	✓		
Invista Real Estate Investment Management Ltd	✓	✓		
LBG Capital Holdings Ltd	✓	✓		✓
LBG Capital No.1 Plc	✓	✓	✓	
LBG Capital No.2 Plc	✓	✓	✓	

Sample illustration of issuer code coverage for major recognised vendors

Illustrative sub-set from 190 company names (in total)

Source: Direct from each data vendor

Data content challenge: Issuer data

- Findings

		Vendor A	Vendor B	Vendor C	Vendor D
Issuer	Missing Coverage	9%	0%	0%	9%
	Incomplete Name or Format	5%	0%	0%	9%
	Differing Issuer	5%	5%	5%	0%
	Total Discrepancies	18%	5%	5%	18%
Ultimate Parent	Missing Coverage	41%	5%	9%	9%
	Incomplete Name or Format	0%	0%	0%	0%
	Differing Issuer	0%	5%	0%	5%
	Total Discrepancies	41%	9%	9%	14%

- Discrepancies at Issuer level were between 5-18% and between 9 and 41% at Ultimate Parent level.
- Coverage was an issue at both Issuer and Ultimate Parent level, with Vendor A displaying significant issuer and security coverage gaps.
- Vendors differed with naming formats and accuracy, while conflicting companies at both Issuer and Ultimate Parent are particularly concerning.

Licensing considerations for using data in Solvency II models by Insurers

	Instrument		Entity		Credit Rating	Asset Type	Look through	Pricing	
	Quoted	OTC deriv	Counter-party LEI	Issuer				Quoted	OTC deriv
Licence constraints	High	Med	-	Med	High	Low	High	High	-
Cost of data	High	Med	Low	High	High	Low	High	High	High
Maintenance	High	Low	High	High	Med	Low	High	High	High

Note: These measures represent a subjective industry interpretation. The ratings do not represent HSBC's business

Key:

High Impact

Medium Impact

Low Impact

No impact

Redistribution

- The data vendors are paid by TPAs (Third Party Administrator)
- The TPA can use the data extensively but only internally
- Specified data fields can be included in client reports
- Clients are permitted to forward TPA reports on to regulators, and to reconcile to their own records, but **not to re-use the data** within their own systems

Industrial-scale best of breed validated data is created by TPA, but is of limited use to client themselves (e.g. **cannot** use for MCR/SCR purposes)

Pass Through

- TPA's role is to pass-through data content as a conduit
- Fund Managers and Insurers **can** re-use the market data content within their systems (e.g. Solvency II models)
- Data Vendors are encouraged to offer "regulatory lite" reasonable cost licenses to asset owners, where content is used purely for regulatory purposes

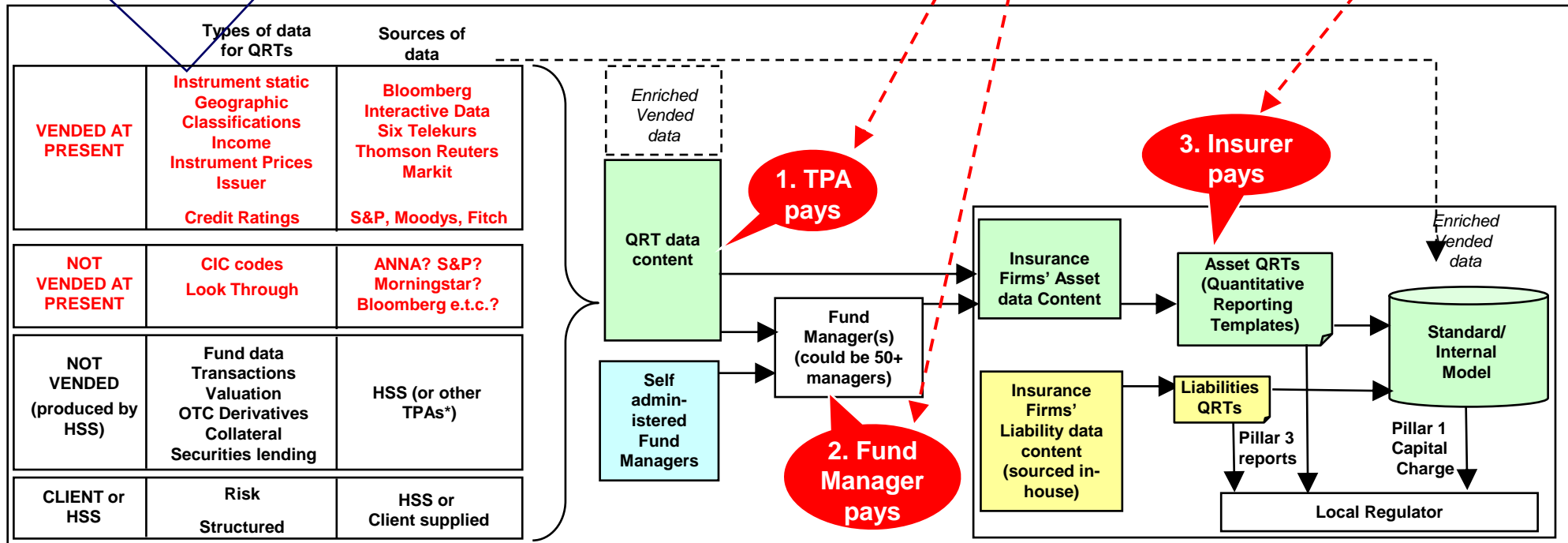
Permits Insurers who receive QRT Pillar III reporting data to re-use the same data for their MCR/SCR models

Licensing: Regulatory 'lite' packages to minimise incremental market data costs for insurers with the introduction of regulation

As presented to EIOPA May 24th 2012

- * Vended data content is not currently subject to regulation at source
- * Solvency II places much increased reliance on completeness, accuracy, appropriateness and timeliness

- * Solvency II represents a potential windfall revenue gain for some data vendors (at the expense of some Insurers) for data content that is already in existence
- * Some (but not all) data vendors charge a separate fee for all parties who use the market data within their systems and models (in this case 1. TPA, 2. Fund Manager and 3. Insurance firm)



* TPAs = Securities Services (e.g.:HSBC, JPM, NT, BNYM, Citi, State St, BNP Paribas)

Key	
Red text	Vended: sourced from data vendors
Black text	Sourced from TPA services
Blue shaded	Asset data
Yellow shaded	Liability data

Regulatory licence packages, for Solvency II and for other regulatory purposes, will be necessary to put a cap on the additional cost to the industry

In what ways does Solvency II reporting differ from existing investment reporting?

	Instrument		Entity		Credit Rating	Asset Type	Look through	Pricing		History
	Quoted	OTC deriv	Counter-party	Issuer				Quoted	OTC deriv	
Solvency II	High	High	Med	High	High	High	High	High	High	

Key: High Impact Medium impact
Low impact No impact

Regulatory drivers	<ul style="list-style-type: none"> ■ Capital Adequacy ■ Transparency ■ Fast and accurate crisis reporting
Business drivers	<ul style="list-style-type: none"> ■ Optimising cost of capital ■ Incentive to supply data content to ensure investment types are eligible
Reporting requirements	<ul style="list-style-type: none"> ■ Quantitative Reporting Templates (QRTs) are prescriptive and require extensive high end data content ■ Quarterly, monthly and ad-hoc (i.e. produce daily)
Data content impact	<ul style="list-style-type: none"> ■ Very wide scope: Instrument, prices, classifications, ratings, fund accounting, custody, collateral, stock lending, derivatives, risk and structured transactions ■ Cost of data vendor licenses ■ Content challenges: Look through, CIC, Valuation type, Issuer

Solvency II	
Issuing body	EIOPA (European Insurance and Occupational Pensions Agency)
Business lines scope	Buy-side Insurance firms. Solvency regime for all EU insurers and re-insurers
Purpose	Single market in insurance services in Europe

What is meant by assurance of complete, accurate and appropriate data

What is meant by assurance of complete, accurate and appropriate data?

- Solvency II Pillar II governance requires formal Assurance that data is complete, accurate and appropriate
- Insurance firms must be able to prove that their suppliers have put in place a governance framework that provides the necessary levels of data quality oversight, to include escalation of issues, data limitations and monitoring of KPIs
- Audit firms are preparing to produce Solvency II assurance reports that demonstrate the adequacy of controls through formal testing of capability. These reports are likely to be based on an adapted version of existing audit reports
- Assurance at this stage is likely to be based on effective governance, control processes and certainty about the levels of checks and balances employed as opposed to the content itself, due to remaining uncertainties

Valuation transparency and lineage considerations

- Solvency II reports require the ability to identify the source of the data content, and to evidence that quality assurance checks have been performed

Conclusion: Buy-side industry level asset reference data

The challenge	<ul style="list-style-type: none">■ Regulators (and regulations) require data that is complete, accurate and appropriate■ Yet data management, at an industry level, is immature with few standards, minimal regulation over data content and a lack of industry leadership
Business impacts	<ul style="list-style-type: none">■ Increasing requirement to aggregate and manage risk at overall portfolio level■ Potentially very high cost to deliver new regulatory reporting■ Potential impact on investment decisions if data cannot be supported
Business opportunities	<ul style="list-style-type: none">■ Long term efficiency, straight through processing and cost base reduction
Data management strategy implications	<ul style="list-style-type: none">■ A much raised bar for securities reference data■ Increased emphasis on entity data■ Evidence of source data identification and quality checks (lineage/transparency)■ Some IT systems will need “heavy lifting” changes – need to “dig up the road once only”

Note:

* refers to asset data that is common in the market an available from data vendors

It does NOT mean real time data

Next Steps: What needs to happen next to resolve Asset Data challenges?

Who	Action Needed	Key Outcome
Regulators	<ul style="list-style-type: none"> ■ Preparation for Solvency II implementation date which has been confirmed as Jan 2016 with interim reporting in 2015 ■ Financial Stability, ECB and Pensions (IORP, Institutions for Occupational Retirement Provision) reporting requirements, especially look through stipulations, to be confirmed 	Industry investment to be directed towards delivering the solutions for Look Through, CIC, NACE and AVM
Insurers	<ul style="list-style-type: none"> ■ Use “Real world” test data for both Pillar I and Pillar III reporting to establish extent of data gaps; manage resulting gaps and inconsistencies ■ Ensure that all suppliers meet Assurance guidelines (when needed) ■ Ensure licenses are arranged to consume market data for Pillar I model calculations 	To plug-in real world asset data to all three pillars of Solvency II programmes and prepare to manage the resulting data gaps
Fund Managers	<ul style="list-style-type: none"> ■ Decide which data vendors can manage the dissemination of look through information ■ Agree on standard formats and specific asset information necessary for look through data exchange 	Decide on acceptable industry solution(s) to support the release of Look Through quickly & securely
Fund Administrators	<ul style="list-style-type: none"> ■ Work with all parties to close remaining gaps 	To be able to deliver Solvency II Pillar III reporting
Data Vendors	<ul style="list-style-type: none"> ■ Provide credible look through services to meet industry requirements ■ Support completeness, accuracy, appropriateness as well as security, coverage, consistency and reasonable cost ■ Accept that Assurance testing will necessarily include data vendors 	To supply the reference data requirements for Solvency II to high levels of quality at a reasonable cost

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