

Structured ordering and beneficiary customer data in payments

Whitepaper

Important Update (February 2019):

As part of the 2019 SWIFT standard release cycle, the global community approved the CR 001410 "Extend use of free format options in fields 50 and 59". As a consequence, the migration to structured customer data will no longer be enforced in the MT standard. Instead, it will be an integrated element of the global migration to the ISO20022 standard starting in November 2021 (see IR807).

As outlined in the CR 001410, **PMPG fully supports the transition** to structured data in the ordering customer and beneficiary customer fields and believes that this transition will be both more efficient and more effective while aligning to the adoption of ISO 20022 messages in payment markets. The PMPG is currently revising this whitepaper and plans to publish a new document around mid-2019.

Note:

The Payments Market Practice Group (PMPG) is an independent body of payments subject matter experts from Asia Pacific, EMEA and North America. The mission of the PMPG is to:

- take stock of payments market practices across regions,
- discuss, explain, and document market practice issues, including possible commercial impact,
- recommend market practices, covering end-to-end transactions,
- propose best practice, business responsibilities and rules, message flows, consistent implementation of ISO messaging standards and exception definitions,
- ensure publication of recommended best practices,
- recommend payments market practices in response to changing compliance requirements

The PMPG provides a truly global forum to drive better market practices which, together with correct use of standards, will help in achieving full STP and improved customer service.

1 Introduction

In response to the elimination of the free-format options in fields 50a (Ordering Customer) and 59a (Beneficiary Customer) in payments messages during the SWIFT standard release in November 2020, the Payments Market Practice Group (PMPG) decided to issue a whitepaper to help the community in preparing and conducting the migration from unstructured to structured customer data. Within this whitepaper, the PMPG intends to increase the awareness on this important topic by highlighting the wide range of potential impacts and implementation challenges for the various stakeholder groups.

Since the implementation of the structured options 50F and 59F in the MT103 and related messages, the industry has not yet seen a significant shift to these structured formats. Although the end date of unstructured formats may appear to be in the distant future, we encourage the community to start acting now due to the size of the upcoming change and implications on the industry. The PMPG is convinced that the migration towards structured customer data is going far beyond a regular SWIFT standard release change. The upcoming change will require stakeholders involved in a payments chain to review their processes, data inventories and systems to comply with the new quality standards.

At a first glance, you may think that the SR 2020 change will 'only' impact SWIFT FIN based cross-border payments or payments via a SWIFT FIN based RTGS System such as CHAPS (UK), TARGET2 (EUR), MEPS+ (Singapore), CHATS (Hong Kong), etc. The change however will also indirectly impact those systems that are based on XML/ISO20022 or a local format due to the potential interaction with MT messages on SWIFT's FIN Messaging Service and/or cross-border payments. In order to ensure clear data mapping and interoperability in correspondent banking, it is crucial that these impacts are addressed as soon as possible. This is accentuated by the fact that an increasing number of market infrastructures are in the process or planning to migrate to the ISO20022 standard.

As a matter of fact, the upcoming SR 2020 change will not only impact market infrastructures. High quality of customer data needs to be addressed at source of the payment lifecycle (capturing of payment) and even before (client and counterparty inventories) and therefore might have fundamental implications on banks, their customers and on indirectly involved players such as software providers.

This document aims to provide information and to support the communities in the journey towards structured customer formats, however it is not a market practice guideline. The PMPG is aware that this topic is already being discussed in a variety of communities; some of them with the involvement of local market infrastructure providers and/or SWIFT. **The PMPG encourages the communities to provide feedback to this whitepaper, either through your PMPG representative or directly to the PMPG Secretariat (info@pmpg.info) by December, 31st 2017.** The PMPG will collect this input and take it into consideration for a consecutive publication such as a market practice guideline.

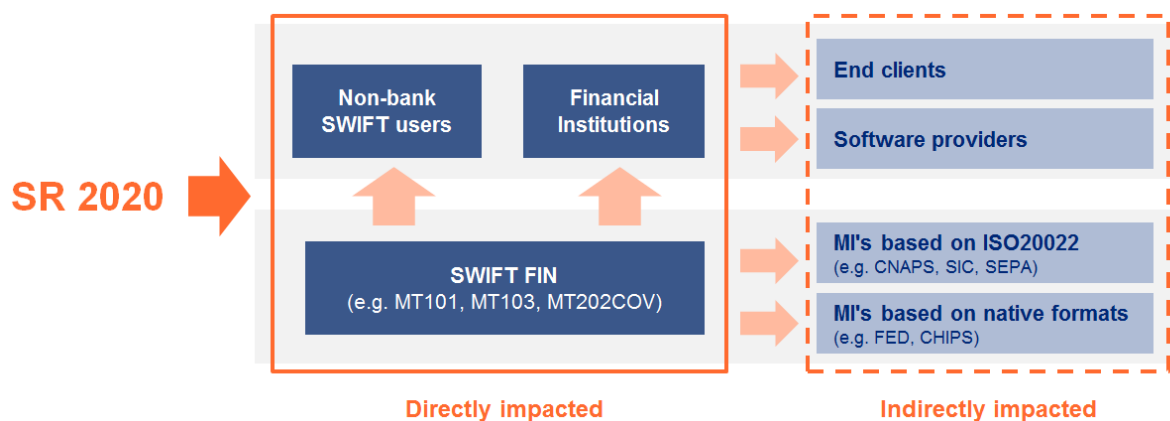


Illustration 1 – Impacted Stakeholders by the SR 2020 change

2 Why the need for structured customer data?

2.1 A strong request from the authorities

New requirements emerge in sanctions and compliance every year. The screening of payments messages has been put high on the agenda by the regulators asking the industry to identify sanctioned entities within payments messages. In their different documents (especially the more recent ones), the authorities are continuing to indicate the crucial importance of high data quality in payment messages.

Since the publication of the revised FATF recommendation 16 in 2013 extending the scope of the former SR VII, complete originator (payer) and beneficiary customer (payee) data has become a fundamental area of focus for all involved parties in the payments chain of cross-border payments and domestic wire transfers, including serial payments and cover payments. The requirement describes that necessary information on the ordering and beneficiary customers of wire transfers is immediately available to ordering, intermediary and beneficiary financial institutions in order to facilitate both the identification and the reporting of suspicious transactions.

But what does high quality data actually mean? How can banks assess whether the customer data in payments messages is complete and meaningful? How should banks screen the messaging data in an efficient way to detect and stop payments relating to money laundering and terrorism financing?

The issue with unstructured data is that the data elements such as name, address, customer identification and country of residence are bundled in a string of characters. The data is usually mapped to several lines (e.g. 4 x 35 characters), but there is no clear method to identify what line holds which data element. It is therefore very difficult to identify completeness of data because a simple count of characters or number of provided lines with data could lead to wrong conclusions. Similarly, the screening of data is difficult because the data elements in the message cannot be unambiguously compared with data elements on a sanctions list. Example: How to recognize a country name or country code in a string of text?

The answer to the above challenges is structured data. In simple terms, structured data means that data is logically populated in different elements whereby it is transparent what element carries which data.

Illustration 2 – Example of unstructured vs. structured data

Unstructured data	Structured data
<p>Example: MT103 SWIFT FIN (Option K)</p> <pre style="background-color: #f0f0f0; padding: 10px;">:50K:/BE30001216371411 JOHN SMITH HOOGSTRAAT 6, BRUSSELS BE</pre> <p>■ Text string</p>	<p>Example: MT103 SWIFT FIN (Option F)</p> <pre style="background-color: #f0f0f0; padding: 10px;">:50F:/BE30001216371411 1/JOHN SMITH 2/HOOGSTRAAT 6 3/BE/BRUSSELS</pre> <p>■ Name ■ ISO country code ■ Address ■ City / town</p>

2.2 Removal of free-format message field options for fields 50a and 59a

With FATF recommendation 16 being adopted in markets around the world, it is important to maintain efficiency in the payments flows and the service that banks provide to their clients. The need for having more transparency in payments while further improving straight-through-processing and reducing false positives in compliance screening were ultimately the drivers for the SWIFT community to implement a more structured approach to payment data (-> see [SWIFT Standard Information paper](#)).

As of November 2020, the SWIFT Release will remove free-format options in fields 50a (Ordering Customer) and 59a (Beneficiary Customer) from the MT103 and related messages to ensure that originator and beneficiary data is captured, processed and transported in a structured format. This implies important work to prepare for the change. Doing nothing is not an option and the sooner the information is structured the better. This will produce benefits in terms of operational speed and reduced compliance costs.

Illustration 3 – Benefits of structured customer data in payments messages



3 Impact on industry

Moving towards structured data is mainly driven with a regulatory and compliance motivation. It impacts all parties in the payment chain, not only the banks. The impact for customers and Market Infrastructures also needs to be understood well from an end-to-end point of view. Furthermore, it must not be viewed in isolation. It must be closely aligned with other projects running in parallel, such as the migration towards XML formats, to ensure interoperability.

3.1 Local Market Infrastructures

The impact for local Market Infrastructures (MIs) depends greatly on the functionalities provided to its members and the formats used. The direct impact is limited for FIN-based MIs. The structured options in the fields 50a and 59a already exist today, and the MIs should already be in a position to process the structured options. Accordingly, after November 2020, these MIs simply will not receive any more payments with unstructured formats.

However, this is different when proprietary formats or XML formats are used, triggering a potential mapping impact to the member communities. The same applies if different format and content requirements exist when comparing domestic and cross-border transactions. In the case of proprietary formats, the MIs and its members need to decide how to deal with unstructured data and formats as this will otherwise automatically lead to mapping shortfalls within the end-to-end payment chain. The respective community may toned to

consider eliminating unstructured formats for Originator and Beneficiary data if it is still used in the context of cross-border payments.

Considering that several MIs are in the process of migrating from SWIFT FIN or proprietary formats to XML with different timelines than November 2020, it is recommended that within the migration project to conduct a dedicated review of the structured data requirements. Only a close alignment with the SWIFT Options F (or Option A) will avoid mapping issues and ensure interoperability when transactions are converted prior to or subsequent to the clearing system into the SWIFT MT103 format which is likely to remain for quite some time in cross-border payments

3.2 Financial Institutions

From a pure formatting point of view, the largest impact of the retirement of the unstructured options is faced by the banks, mainly for the originating banks for cleaning up its customer data and ensuring proprietary channels capture the requisite information to populate the fields. Intermediary banks need to ensure that the data is forwarded unchanged, and in the same structure/field options. This should not be reason for concern though as it follows existing market practice already. Beneficiary banks need to ensure that they are able to receive the structured field format. This should also not be an issue as it is existing practice already.

As per standard change protocols, all banks will need to consider an appropriate end-to-end system testing / user acceptance testing (UAT) to ensure that the structured data is passed-on between all applications involved in the processing chain, without loss of any data and structure, and without any population of data in the wrong subfields.

In addition to the format requirements itself, banks should evaluate how their AML systems / monitoring processes could be optimized to fully benefit from the positive impact of structured customer data in payments messages.

Several points are raised below which should be considered. These items are not considered complete and additional issues may be identified in the course of the individual projects.

- **Impact for originating banks related to field 50a**
 - The customer data repository / golden source needs to be reviewed and cleansed to enable accurate, simple and standard mapping to the structured format. This may be a complex task given the complexity and magnitude of the data set involved. It may be appropriate to perform/align such a task directly in connection with any FATF 16 projects to support and leverage the project governance.
 - In many cases, the bank's customer data base was built at a time when the need for a more detailed structure of the customer data, e.g. address data was not required in the same way as today. Accordingly, even a clean-up exercise may not be sufficient if the database does not allow you to store the different underlying data attributes.
 - The backend/processing system might be able to send-out the structured field 50a, potentially overriding any information received from the customer and replacing it with such data stored in the bank's system, as this data is considered being reviewed from a KYC perspective, respectively to ensure that validated data is provided.
 - The length and the number of line remains unchanged, i.e. restricted to a maximum of 4 x 35 characters. Accordingly, the impact and the system behaviour of the additional number and the "/" needs are to be tested. This is especially relevant in such cases in which the customer data (name, address etc) is exactly either 34 or 35 characters long, and still fitting within the former unstructured options. It needs to be verified if the system logic truncates data in such a case, or if the next line is used, and thus limiting the use of the subsequent lines. For truncation issue, please also refer to the section 0 "Main Challenges", further below.

- The processing and the messaging systems need to be enhanced, i.e. outbound messages must not be sent with the Option K anymore.
- **Impact for originating banks related to field 59a:**
 - Client channels such as internet banking and host-to-host/file based interfaces must be adjusted to ensure that the customer provides required beneficiary data in the desired structured format. Examples:
 - Provide separate and dedicated fields for the individual data elements
 - Implement field validations (e.g. Post Codes)
 - Provide drop-down lists (e.g. ISO country codes)
 - Implement stricter validation rules for file-based channels
 - Any mapping must be structured in the integration channels or conversion layers with standard validations to ensure that only structured data will be sent to backend applications.
 - All processing systems need to be enhanced, i.e. outbound messages must not be sent with the No Letter Option anymore.
 - Corporate ERP systems need to be able to populate the new format and the bank's file channel needs to be able to map the customer provided structured data into the field 59 Option F (e.g. corporate might use ISO XML structured data).
- All format changes within the MT103 have a direct impact on the MT202COV if used, which requires the appropriate adjustments in the Sequence B of such messages.

3.3 Impact on end clients

Besides the MIs and the Financial Institutions we must not forget the underlying customers. This mainly refers to the originating customer, i.e. towards the maintenance and handling of the beneficiary data. At the same time, such customers may challenge its business benefits unless the customer has already experienced the impact of the growing compliance requirements.

- The customer data /ERP systems need to be aligned with the required structure of the SWIFT options
- A clean-up exercise of beneficiary data is likely required, especially if stored in free formats. Data must not only be complete and accurate but also structured in line with the requirements of the option F.
- Any systems used for executing the transfer, e.g. file based payment instructions, need to be aligned.
- Manual capturing into bank's online systems should not be a major concern (for the customer), if the bank has completed its own efforts on the underlying GUI.
- Many customers are already providing its instructions in XML formats which should not require substantial changes. Although it needs to be verified that the beneficiary information is captured in line with the appropriate XML specifications. A simple mapping of free format data into XML may support the later mapping into the field 59 Option F of the MT103, although the quality of data would not necessarily be improved.
- Where a customer does not commonly include beneficiary address details, this will represent a major change in payment initiation behaviour.

All of the above requires a communication program for bank customers that clearly conveys the need and benefit of the change, and the direct impact to them.

4 Main challenges

Currently banks are facing a number of challenges in populating full originator’s name and address information into the originator field (field 50a) in MT103 and also in ensuring full originator and beneficiary information are carried through when mapping to message formats of different clearing systems. We will discuss the challenges in four broad categories below:

- 4.1 Truncation of data
- 4.2 Handling of ultimate originator or ultimate beneficiary information
- 4.3 Separation of different address elements
- 4.4 Mapping between different standards

4.1 Truncation of data

Banks customer name and address in their customer record may have more than 4 x 35 characters or they are maintained in different formats which make it difficult to fit the entire name and address into the originator field (4 x 35) of a MT103. Examples:

- Some may have name and address which is more than 4 x 35 characters
- Some may have customer name in one field and address in a different field in the customer record, and is more than 4 x 35 when combined

Banks would thus need to either truncate the address or continue the address in other fields of MT103, very often in the 'bank to bank information' field (field 72). Truncation of address would require consistent handling across the industry (and potentially even within the same bank) and also to fulfil applicable regulatory requirement, such as to include customer identification number or date and place of birth when address is not complete per specific AML guidelines. Incomplete address may also lead to a subsequent need to provide full address when requested by the intermediary / beneficiary banks causing manual follow up, additional work to banks and payment delay.

Continuation of address into the field 72 may cause unnecessary straight through processing issues, resulting in information overflow in the field 72 or simply not being a feasible solution if the field 72 is already used for reporting other information such as purpose of payment for some countries. For meeting the structured field requirement, there are also challenges with trying to fit the originator's name and address into a 4 x 35 length while observing the guideline to put different elements of the address into separate lines. The opportunity for ‘wrapping’ of data elements across lines whilst maintaining the separation of data elements between lines creates a significant field availability problem. The example below illustrates a case.

The following example illustrates a case involving a payment originated from a joint account. It shows that the structured field 50 Option F won't be able to hold the same amount of information compared to the unstructured field 50 Option K and is likely to lead to a truncation of data:

Original customer record

Joint account number	030123456001	
Joint Customer Full Name	CHRIS EVANS AND ROBERTER DOWNEY JUNIOR SECOND	Name
Address line 2	XYZZ DHAKA MAIN OFFICE BRANCH	Address
Address line 3	ANCHOR TOWER 3, 123 BIR UTTAM C R	
Address line 4	DUTTA MIDDLE ROAD, DHAKA PROVINCE	
Address line 5	BANGLADESH	
Address Country	BD	
Joint Party ID	B0000101	
Sole Party 1 ID	B0000201	Town
Sole Party 2 ID	B0000202	Client ID

Current treatment for non-structured field 50 Option K where address is truncated and customer identification number of joint account owners are appended to the end the last line of the field:


:50K:/030123456001	
CHRIS EVANS AND ROBERTER DOWNEY JUN	Name
UNIOR SECOND : ER 3, 123 BIR UTTAM C R	Address
DUTTA MIDDLE ROAD, DHAKA PROVINCE B	ISO country code
ANGLADESH/BD ..ID : B0000201:B0000202	Town
	Client ID

Under structured field guideline, elements of the address **cannot fit** into the available space of the field 50 Option F:

:50F:/030123456001		
1/CHRIS EVANS AND ROBERTER DOWNEY J	Available space	Name
1/UNIOR SECOND		Address
2/NO 1, XYZZ DHAKA MAIN OFFICE BRANC		ISO country code
2/H ANCHOR TOWER 3, 123 BIR UTTAM C		City/Town
2/R DUTTA MIDDLE ROAD, DHAKA PROVIN	Potential truncation	Client ID
2/CE		
3/BD/BANGLADESH		

To fit into field 50 Option F with structured format and provide complete data elements, only the country can be retained together with the joint account owners customer identification number. The address information in this example can't be mapped due to the space limitation of the field:

:50F:/030123456001		
1/CHRIS EVANS AND ROBERTER DOWNEY J	Available space	Name
1/UNIOR SECOND		Address
3/BD/BANGLADESH		ISO country code
6/BD/ABC/B0000201 B0000202		City/Town
		Client ID

 Address data is truncated

4.2 Handling of ultimate originator or ultimate beneficiary information

The existing payment standards (MT103) cater for multiple banks in the payment chain but only have relevant fields for two non-bank entities to be involved, i.e. ordering customer (field 50a) and beneficiary (field 59a). In the case where some non-bank financial institutions or corporate entities may initiates or receive payment on behalf of third parties (e.g. their own customers), the existing standards do not cater for such scenarios. Thus even if the originating bank is given with the ultimate ordering party or ultimate beneficiary information, it has difficulty including it in the payment message to clearly communicate to the next bank what the underlying information actually relates to, as there is no dedicated fields to report this information. In the absence of any guidance to the contrary, the originating bank may include the ultimate originator/ultimate beneficiary

information in field 70 or field 72 which may not allow appropriate monitoring, and which may prevent the payment from being processed on a straight-through basis. There were various attempts undertaken by different communities in the recent years to address this issue by enhancing the SWIFT FIN format, e.g. by expanding the size of the fields 50a/59a or by including dedicated codes into field 72. The most recent change request in this context was discussed as part of the SWIFT Standard Release 2018 cycle, but didn't get the required majority. The handling of ultimate parties thus continues to be an ongoing challenge in the legacy payments formats.

4.3 Separation of different address elements

The SWIFT formatting guidelines define the various elements of the ordering customer in its structured format. One aspect that could pose a challenge is the fact that the address elements "Street Name/Building Number" needs to be populated into subfield 2 ("2/..."), while the "Town/ZIP Code" needs to be populated into subfield 3 (after "3/XX/...") in both, SWIFT FIN field 50 Option F and field 59 Option F. Financial Institutions or other impacted stakeholders treating these elements as common address elements will need to separate these two elements in the structured SWIFT format.

Illustration 4 – Usage of subfields 2 and 3 for "Town"

Incorrect	Correct
<pre>:50F:/DE25481230000001998736 1/FRITZ MUSTER 2/ROSENWEG 6 2/01067 DRESDEN 3/DE</pre> <p><i>Incorrect usage of subfield 2</i></p>	<pre>:50F:/DE25481230000001998736 1/FRITZ MUSTER 2/ROSENWEG 6 3/DE/01067 DRESDEN</pre>
<p>■ Name ■ Address ■ Town ■ ISO country code</p>	

Financial institutions not following the guidelines may face inquiries, delayed or even rejection of payments, despite the fact that full data is provided. The challenge will be to separate the individual data elements at the source of a payment, e.g. in the client static data system and/or mapping logic of the core payments engine. Fixing such quality issues in a subsequent place (e.g. in a messaging component) is not the best solution as it would involve interpretation and conversion of data.

Note: The ISO20022 format is even more granular in the definition of the address elements "Street Name" and "Building Number". While SWIFT FIN only foresees one common subfield 2 for these two elements, ISO20022 offers two separate fields ("StrtNm" and "BldgNb").

Illustration 5 – Comparison of formatting addresses in SWIFT FIN and ISO20022

SWIFT FIN	ISO20022
<pre>... 2/ROSENWEG 6 ...</pre> <p>■ Address</p>	<pre>... <PstlAdr> <StrtNm>ROSENWEG</StrtNm> <BldgNb>6</BldgNb> ...</pre> <p>■ Street Name ■ Building Number</p>

4.4 Mapping between different standards

The different clearing formats used in local MIs pose a challenge to banks either in their role as originating bank, intermediary bank or beneficiary bank. The originating bank has to map information in the customer instructions to different payment formats used in different MIs. This incurs high development, testing, implementation as well as subsequent maintenance costs. In the course of mapping, there could be data truncation issues which will require the originating bank to store the original information in a manner to support its subsequent enquiry by other intermediary / beneficiary banks.

For example, per FATF recommendation 16 requirement, where all originator information cannot be provided in domestic wire transfer, the ordering financial institution can provide additional information of the originator or a unique transaction reference number that will enable the transaction to be traced back from the originator to the beneficiary. The ordering financial institution should make available such information within three business days of receiving the request.

To an intermediary bank, the differences in payment formats in SWIFT FIN and clearing message format used in MIs pose a challenge in fulfilling obligations to ensure that all originator and beneficiary information that accompanies a wire transfer are retained. This is more of an issue when the MI clearing format is not based on MT messages.

In such a case, when an intermediary bank processes a cross-border MT103 payment order which is to be cleared via a MI which does not adopt MT type message standards, there is a need to map the fields across the MT103 and MI clearing format.

In the course of mapping, there may be data truncation or wrong/inconsistent mapping between MT and the MI clearing format; e.g. where MI clearing format is less comprehensive or shorter in field length than MT103 fields, originator/beneficiary or other payment information may be truncated or dropped.

FATF recommendation 16 also requires that a record should be kept, for at least five years, by the receiving intermediary financial institution of all the information received from the ordering financial institution or another intermediary financial institution where technical limitations prevent the required originator or beneficiary information accompanying a cross-border wire transfer from remaining with a related domestic wire transfer. The inconsistent standards increase the work of follow-up at both the beneficiary and intermediary banks, potentially affect straight-through processing and causing undue payment delay.

For a beneficiary bank, the quality of payment message content will have dependency on the correct, complete and consistent payment information mapping at the originating /intermediary banks, where different standards used in the payment chain adds to the challenge. Lack of complete and clear payment information at beneficiary bank will cause non-straight-through processing, follow up work and payment delays.

5 Recommendations and Next Steps

Actions are required by the entire community to prepare and conduct a successful migration to structured customer data by the SWIFT Standard Release in November 2020 and to ensure interoperability beyond this date.

- Call for early involvement of all stakeholders (multi-year project, many players involved)
- Communities to define a roadmap to move to structured customer data
- Clarify the need for market guidelines/tools/support required from industry groups/SWIFT/regulatory bodies etc.
- Consider using analytics and monitoring tools to ease migration to structured data
- Keep up with future trends in the further development of structured data (e.g. LEI)

Illustration 6 – Recommended actions (non-exhaustive list)

1 Market Infrastructures	<p>Non-SWIFT MIs should consider engaging their communities to...</p> <ul style="list-style-type: none"> ➢ Understand impact of SR 2020 on local infrastructure, e.g. when a payment involves a cross-border leg to the domestic payment system (correspondent banking) ➢ Decide on way forward on usage of structured vs. unstructured customer addresses until and beyond SR 2020 (e.g. elimination of unstructured options in local message format; establish implementation guidelines / market practices etc.) ➢ Agree with the impacted stakeholders on a common timeline and migration approach (if applicable)
2 Financial Institutions	<p>Consider initiating a dedicated project (if not done so already) focusing on...</p> <ul style="list-style-type: none"> ➢ Technical adherence to the SR 2020 change ➢ Analyse storage, usage and exchange of structured customer data across their internal architecture ➢ Reorganisation/remediation of their customer static data, settlement instructions, payments templates, standard standing orders etc. ➢ Formatting guidance for their customer initiation channels ➢ Monitoring and customer education/data remediation of payment traffic identified as being unstructured ➢ Review of any MT101 replay agreements <p>Consider engaging with their non-SWIFT MIs on their plans on offering unstructured customer going forward (see block 1 above)</p> <p>Consider engaging software providers to raise awareness on the SR 2020 change</p>
3 End clients	<p>Consider engaging with their Financial Institution(s) and Software Providers to...</p> <ul style="list-style-type: none"> ➢ Understand impact of SR 2020 on customer inventories / ERP systems ➢ Understand the impact on their communication channels with their payments service provider(s) ➢ Assess the need for migration of unstructured to structured customer data (static data "clean-up")
4 Industry / Regulatory Bodies	<p>Provide guidance and/or market practice to address field length issues; i.e. acceptable truncation patterns, population in different fields, etc.</p>