Food in the Platform Economy
Assessments (Accessible Version)[1]

Description

This document presents a proof of concept tool for assessment of salient food safety and integrity risks by several types of online food actors.

The tool is composed of five worksheets:

- Risk maps (1x): Declare the foundational rationales that can be used to gauge risk.

- List of hazards (3x): Enumerate challenges that could contribute to food safety or integrity incidents (one sheet declares the format used and what each cell means, another sheet lists hazards for use by the vendors' components of the assessments, and a third one lists hazards for use by the intermediary platforms' components).

- Assessment (1x): A macro-enabled worksheet that generates assessment questionnaires.

Macros must be enabled for this file to work.

Please note that this file has an associated report that explains the file in much more detail.

This file is a proof of concept to demonstrate feasibility and functionality (please refer to the associated report for a more detailed explanation). By the same token, the file does not present a ready-to-use final tool."

Author

Dr Jose A Bolanos, jose.bolanos@food.gov.uk, j.bolanos@lse.ac.uk.

Date

08/02/2021

---

[1] The original version of this file is a macro-enabled Excel file. For accessibility, this document presents an easier-to-read version of this tool.

Version control

v. 08/02/2021: Additionally, adjusted text variously for consistency across all tools/files in this project.

v. 12/01/2021: First version of the (external) assessment module (this file) as a standalone document. Previously, assessments were offered as part of the master document noted below, which was large and somewhat hard to follow. The new set of standalone documents facilitate communication.

v. 01/01/2021: The master risk ranking matrix used to generate this module was quality assured by a member of the FSA's Analytics Unit. No additional quality assurance is deemed necessary at the moment because the proof of concept nature of the tool implies a need for changes before a final product is available.

v. 10/11/2020: Visual presentation improved. General functionality revised.

v. 01/10/2020: Accidentally named and shared with wrong date in version, see v. 10/11/2020 for pertinent info.

v. 30/09/2020: First functional version of master risk ranking matrix (covering multiple types of online food actors and presenting the functionality for self-assessments by actors as well as assessments by auditors, inspectors and/or regulatory organisations).

Risk ranking rules

What are risks?

Risks are the result of considering the likelihood of a (potential) hazard being realised and the impact of such event (r = likelihood * impact).

What is a risk rank?

Risk ranking is a way to compare the risk represented by different actors (or types of actors).

What does this worksheet do?

This sheet specifies rules that enable assessing the likelihood and potential impact of non-descript hazards related to online food businesses (and declare the uncertainty associated with estimates). These rules are foundational to all other sections of this file.

Table 1: Food safety risk map.

		Impact		
		Low Mild illness: not usually life-threatening, usually no sequelae, normally of short duration, self-limiting symptoms (e.g. transient diarrhoea).	**Medium** Moderate illness: incapacitating but not usually life-threatening, sequelae rare, moderate duration (e.g. diarrhoea req. hospitalisation).	**High** Severe illness: causing life-threatening or substantial sequelae or illness of long duration (e.g. chronic hepatitis).
Likelihood	**Very high** Events occur almost certainly.	6	12	18
	High Occurs very often (>99%).	5	10	15
	Medium Occurs regularly (10-99%).	4	8	12
	Low Rare but does occur (1-10%).	3	6	9
	Very low Very rare but cannot be excluded (<1%).	2	4	6
	Negligible Extremely rare, does not merit consideration.	1	2	3
		Uncertainty		
		Low Solid and complete data available; strong evidence in multiple references; authors report similar conclusions.	**Medium** Some but no complete data available; evidence in a small number of references; authors' conclusions vary.	**High** Scarce or no data; evidence in unpublished reports, observations, or personal communication; authors' conclusions vary.
		1	2	3

Table 2: Food integrity risk map.

		Impact		
		Low	**Medium**	**High**
		No effects, or so mild that they do not merit to be considered	Concrete non-health impact (e.g. financial loss).	Systemic non-health impact (e.g. loss of trust in sector).
Likelihood	**Very high** Events occur almost certainly.	6	12	18
	High Occurs very often (>99%).	5	10	15
	Medium Occurs regularly (10-99%).	4	8	12
	Low Rare but does occur (1-10%).	3	6	9
	Very low Very rare but cannot be excluded (<1%).	2	4	6
	Negligible Extremely rare, does not merit consideration.	1	2	3
		Uncertainty		
		Low Solid and complete data available; strong evidence in multiple references; authors report similar conclusions.	**Medium** Some but no complete data available; evidence in a small number of references; authors' conclusions vary.	**High** Scarce or no data; evidence in unpublished reports, observations, or personal communication; authors' conclusions vary.
		1	2	3

Hazards (Info)

What is a hazard?

A hazard is an issue that could develop into an undesired event.

What hazards is this document hoping to identify?

The FSA has guidance applicable to the normal operation of food businesses. This project is interested only in hazards that result, specifically (or, at least, especially), of the online nature of aspects of the activities by online food businesses.

Why does this section do?

This three-worksheet section declares the hazards that have been identified as applicable to online food businesses. It is arranged in a way that makes it easy to add new hazards. Additionally, feedback is welcome, as are suggestions for additional hazards (please input feedback as comments).

Table 3: Example module (Describes the types of actor this module applies).

Hazard	Self-assessment	Diagnosis	Impact (potential, health)*	Impact (potential, non-health)*
Title. Explanation.	This column presents the hazard as a question for self-reflection by the business.	This column presents the hazard as questions for external assessment, in a non-descript manner that can be adjusted to match assessments	Safety impact. This column provides a drop-down menu for experts (or committees) to define the potential health impact that could	Integrity impact. This column provides a drop-down menu for experts (or committees) to define the potential non-health impact that could

| | | at different levels. | derive from this hazard. | derive from this hazard. |

* Values in cells highlighted red are exclusively to demonstrate file functionality. They have been selected arbitrarily and without even looking at the question next to them, as opposed to corresponding to any type of implicit or explicit guesstimate or assessment.

Hazards (Vendors)

Table 4: General (Applicable to all online food businesses)

Hazard	Self-assessment	Diagnosis	Impact (potential, health)*	Impact (potential, non-health)*
Imperfect registration. Some online food vendors may not be aware of or interested in registration.	Are you a registered food business?	Is [this vendor (type)] a registered food business?	Medium	High
Limited experience. New entrants might be tempted to prioritise the learning of online market dynamics over food safety and integrity concerns.	Have you been operating online for many years?	Has [this vendor (type)] operated online for many years?	Medium	Medium

* Values in cells highlighted red are exclusively for the purposes of demonstrating file functionality. They have been selected arbitrarily and without even looking at the question next to them, as opposed to corresponding to any type of implicit or explicit guesstimate or assessment.

Table 5: *Vendor-101 (Applicable to all online food vendors).*

Hazard	Self-assessment	Diagnosis	Impact (potential, health)*	Impact (potential, non-health)*
Cleanliness. Cleanliness is a foundational requirement. It would be good to confirm if online vendors prioritise it.	Do you ensure that the working environment is clean and suitable for safe food production?	Does [this vendor (type)] prioritise cleanliness?	Low	Medium
FSMS. It is unknown whether all online vendors have a food safety management system (FSMS) in place.	Do you have a food safety management system (FSMS) in place to cover all of your food business activities?	Does [this vendor (type)] have an FSMS in place?	Low	Medium
FSMS (online considerations). Even if a vendor has an FSMS, the vendor might	Have you considered how online activities may call for	Has [this vendor (type)] considered how online activities may call for	Low	Medium

be unaware of the various ways in which online operations may affect the process.	adjusting your FSMS?	adjusting its FSMS?		
Lack of food safety training. The extent to which online food vendors pursue food safety training is unknown, but much variation across types of vendors is plausible.	Have you received food safety training?	Has [this vendor (type)] received food safety training?	High	Medium
Traceability. It is unknown whether many online vendors keep due records of all steps in the intermediation process.	Do you know your traceability obligations and keep records accordingly?	Does [this vendor (type)] understands traceability requirements and keeps traceability records?	Medium	Medium
Allergens (understandin g). Gaps in	Are you aware of all 14 allergens and	Does [this vendor (type)] understand	High	Medium

communication vis-à-vis the platform economy may mean some vendors are only partially aware of allergens and applicable procedures.	prepare your food in accordance to the FSA's allergens guidance?	allergen risks & related procedures?		
Allergens (display across sales channels). Some online food vendors may not display allergen information across all online sale channels.	Do you declare allergen information in all sales channels?	Does [this vendor (type)] display allergen information in all sales channels?	Medium	Medium
Allergens (packaging/service). Some vendors may not display allergen information in packaging or during service	Do you declare allergen information in your packaging and/or at service?	Does [this vendor (type)] display or declare allergens at point of service?	Low	Medium

due to considering online declarations sufficient				
FHRS (coverage). Very small online food vendors may not be covered by the FHRS.	Are you covered by the FSA's Food Hygiene Rating Scheme (FHRS)?	Is [this vendor (type)] covered by the FHRS?	Low	Medium
FHRS (herd effects). Display of FHRS by vendors covered by it may be challenged by their need to appear in listings alongside vendors not covered or not displaying FHRS.	Do you display your FHRS across all sales channels?	Does [this vendor (type)] display FHRS in all sales channels?	Low	Medium
Food fraud (quality of supply).	Do you avoid ingredients buying at	Is [this vendor (type)] buying discounted	Low	Medium

Online vendors may be at increased risk of being targeted by organised crime.	discounted prices and/or from non-reputable sources?	food products or buying from non-reputable sources?		
Food fraud (lack of customer oversight). The disconnection between preparation and consumption may increase the opportunity for fraudulent behaviour by some online food vendors.	Do you prepare food in front of customers or serve food in premises?	Is [this vendor (type)] running a 'dark' kitchen?	Low	Medium

Table 6: *Logistics (Applicable to vendors involved in food delivery and/or food events' management, incl. those that outsource these tasks to contractors or independent partners/associates).*

Hazard	Self-assessment	Diagnosis	Impact (potential, health)*	Impact (potential, non-health)*

Delivery (oversight). The relation between the vendors and those fulfilling logistical needs for them may vary significantly, implying varying degrees of oversight over food delivery and/or events' management.	Irrespective of who performs it, do you have oversight and control of all aspects of delivery and/or event management?	Does [this vendor (type)] have oversight and control of all aspects of delivery and/or event management?	Low	Medium
Delivery (training). Trained delivery personnel are less likely to incur food safety and integrity issues than untrained personnel.	Is your food delivered by someone with food safety training?	Does [this vendor (type)] have their food delivered by someone trained in food safety?	High	Medium
Delivery (temperature). Food (including	Do you or your delivery partner control the	Does [this vendor (type)] have appropriate	Medium	Medium

groceries) is susceptible to changes in temperature.	temperature of the food you deliver?	temperature management procedures/devices?		
Delivery (contamination). Food (including groceries) can be unintentionally or intentionally contaminated during delivery.	Do you or your delivery partner take measures to avoid food being contaminated during delivery?	Does [this vendor (type)] have systems or procedures in place to avoid food being contaminated during delivery?	Low	Medium
Mix-ups (foundational). Accidental mix-ups seem likely in the context of delivery of multiple orders or management of large events.	Do you have procedures to avoid orders from being mixed-up before or during delivery?	Does [this vendor (type)] have appropriate procedures to avoid order mix-ups?	High	Medium
Mix-ups (non-foods). Some online vendors may deliver mixed food	Do you have procedures to avoid food products being mixed with	What is the % of this type of vendor that have appropriate	Medium	Medium

and non-food products or manage events involving both types of products. The digital aspects of logistics involved may increase all associated risks.	non-food products during transport/delivery?	procedures to avoid food and non-food items mix-ups?		
Mix-ups (allergens). Given separation between production and consumption, products containing allergens may easily be confused during or after transport.	Do you have procedures to avoid ingredients being mixed during transport?	Does [this vendor (type)] have appropriate procedures to avoid ingredient mix-ups?	Low	Medium

Table 7: *Personal (Applicable to very small 'personal' type of online food vendors).*

Hazard	Self-assessment	Diagnosis	Impact (potential, health)*	Impact (potential, non-health)*
Mixed activities (storage). Some small online food vendors may not store domestic and business foods separately.	Do you store the food that you use for your business activities separately from the food you use for personal consumption?	Does [this vendor (type)] separate domestic/business storage?	Medium	Medium
Mixed activities (preparation). Some online food vendors may not separate the preparation of food for business and domestic consumption.	Do you prepare the food you sell to or exchange with others separately from the food for your own domestic consumption?	Does [this vendor (type)] separate domestic/business preparation?	High	High

| Nomadic practices (foundational). Some online food vendors travel or otherwise change kitchens in the process of providing services. | Do you change or alternate where or how you store or prepare food? | Does [this vendor (type)] change kitchens as part of their business model? | Medium | Medium |
| Nomadic practices (procedures). A degree of nomadic practices may be impossible to avoid, but procedures to manage the location changes involved may reduce their risk. | Do you have guidelines or procedures to manage the food safety and integrity risks of changing where or how you store or prepare food? | Does [this vendor (type)] have procedures to manage the constantly changing circumstances? | High | High |

Table 8: MSMEs (Applicable to all MSME vendors).

Hazard	Self-assessment	Diagnosis	Impact (potential, health)*	Impact (potential, non-health)*

n/a. Medium sized SME vendors are the archetypal type of online food vendors. Most applicable hazards were covered in previous modules.	n/a.	n/a.	Medium	Medium

Table 9: Large (Applicable to large or industrial type of online food vendors).

Hazard	Self-assessment	Diagnosis	Impact (potential, health)*	Impact (potential, non-health)*
Assessment. Large food businesses often have food safety and integrity procedures in place, but it is uncertain if they have specifically assessed added risks that may arise	Have you evaluated the added food safety and integrity challenges that may arise from the online aspects of your business operations?	Has [this vendor (type)] evaluated the added food safety/integrity challenges that may arise from the online aspects of its operations?	Low	High

from online operations.				
Regulatory mismatch. Aspects of some online food vendors' online operations may fall under the remit/supervision of different local authorities (LAs), which may further challenge the regulation of online activities.	Are all parts of your business inspected by a primary authority?	Is [this vendor (type)] covered by a primary authority?	Medium	Medium

Hazards (Platforms)

Table 10: *General (Applicable to all online food businesses).*

Hazard	Self-assessment	Diagnosis	Impact (potential, health)*	Impact (potential, non-health)*

Hazard	Self-assessment	Diagnosis	Impact (potential, health)	Impact (potential, non-health)
Imperfect registration. Registration expectations for platforms are unclear.	Are you a registered food business?	Is [this platform/mark etplace (type)] a registered food business?	Medium	Medium
Limited experience. New entrants might be tempted to prioritise the learning of online market dynamics over food safety and integrity concerns.	Have you been operating online for many years?	Has [this platform/mark etplace (type)] operated online for many years?	Medium	Medium

* Values in cells highlighted red are exclusively for the purposes of demonstrating file functionality. They have been selected arbitrarily and without even looking at the question next to them, as opposed to corresponding to any type of implicit or explicit guesstimate or assessment.

Table 11: Intermediary-101 (Applicable to all intermediary platforms).

Hazard	Self-assessment	Diagnosis	Impact (potential, health)*	Impact (potential, non-health)*
Unregistered vendors. Platforms not requiring vendors to be registered	Do you require and check registration as food business from vendors	Does [this platform/mark etplace (type)] block admission to	Medium	Medium

food businesses may contribute to an increase in the number of unregistered food operators.	operating in your platform?	unregistered vendors?		
Traceability. It is unknown whether online platforms (or how many) are sufficiently close to their vendors to facilitate traceability should a need for such thing arise (this can be extended to the ability to consider complaints).	Could you trace a food product/service sold or exchanged through your platform to its vendor?	Could [this platform/marketplace (type)] trace products sold through it to individual vendors?	Low	High
Communications with vendors. Platforms that regularly engage with their vendors	Do you maintain regular communication with the	Does [this platform/marketplace (type)] regularly communicate	Medium	Medium

on food safety and integrity issues can help communicate applicable guidance if/when needed; the opposite might represent a communications challenge.	vendors in your platform?	with its vendors?		
Interest in food safety/integrity. The degree to which different platforms encourage vendors to think about food safety/integrity is not well known (especially outside the takeaway sector).	Do you include food safety and integrity considerations in your communications with vendors?	Does [this platform/marketplace (type)] explicitly include food safety and integrity considerations in vendor communications?	Low	High

Interest in food safety culture. The degree to which different platforms encourage vendors to think about their food safety culture is unknown.	Do you include food safety culture considerations in your communications with vendors?	Does [this platform/marketplace (type)] explicitly include food safety culture considerations in vendor communications?	Medium	High
FSA/LA communications. Good communicate with LAs and the FSA can facilitate regulation; poor communication may represent a challenge.	Do you have established channels/procedures to communicate with local authorities (LAs) and the FSA?	Does [this platform/marketplace (type)] have an established communication channel/procedure with LAs and the FSA?	Medium	Medium

Facilitating allergen declarations. Functionality differentials may affect the extent to which a platform facilitates allergen declarations (and their visibility).	Do you provide the functionality for vendors' allergen declarations to be visible?	Does [this platform/mark etplace (type)] make allergen declarations visible?	Low	High
FHRS (admission). Platforms that require vendors to have a minimum FHRS score may represent a lower risk than those that do not.	Do you require a minimum FHRS score from your vendors?	Does [this platform/mark etplace (type)] require a minimum FHRS score from vendors?	Medium	Medium
FHRS (display). Functionality differentials may affect the extent to which a	Do you provide the functionality for vendors' FHRS score to be visible?	Does [this platform/mark etplace (type)] make FHRS scores visible?	Medium	Medium

Hazard	Self-assessment	Diagnosis	Impact (potential, health)*	Impact (potential, non-health)*
platform facilitates FHRS display (and their visibility).				
Quality assurance. Platforms with quality assurance processes may help to reduce the likelihood of unintentional incidents and fraud-related incidents.	Do you inspect or otherwise quality-assure your vendors?	Does [this platform/marketplace (type)] inspects or otherwise quality-assures vendors?	Medium	Medium

Table 12: *Logistics (Applicable to intermediary platforms involved in food delivery/events' management, incl. outsourcing).*

Hazard	Self-assessment	Diagnosis	Impact (potential, health)*	Impact (potential, non-health)*

Ownership. The ownership over issues that may arise during food delivery or management of food events/experiences may vary as per the relation between platforms and contractors/associates.	Irrespective of who performs it, do you have oversight and control of all aspects of delivery and/or event management?	Does [this platform/marketplace (type)] have oversight and control of all aspects of delivery and/or event management?	Medium	Low
Delivery (training). Trained delivery or event management personnel are less likely to incur food safety and integrity issues than untrained personnel.	Do you require or provide food safety training from/to your delivery or event management team?	Does [this platform/marketplace (type)] require or provide food safety training from/to its delivery or event management team?	High	Medium
Delivery (temperature). Food	Do you ask/provide equipment	Does [this platform/marketplace (type)]	Medium	Low

(including groceries) is susceptible to changes in temperature.	from/to you delivery or event management team to ensure that food temperature is maintained throughout delivery or service?	ask/provide equipment from/to their delivery or event management team to ensure that food temperature is maintained throughout delivery or service?		
Delivery (contamination). Food (including groceries) can be unintentionally or intentionally contaminated during delivery.	Do you ask/provide guidelines and equipment from/to you delivery or event management team to avoid food being contaminated during delivery or service?	Does [this platform/marketplace (type)] ask/provide guidelines and equipment from/to their delivery or event management team to avoid food being contaminated during delivery or service?	High	Medium

Mix-ups (foundational). Accidental mix-ups seem likely in the context of the delivery of multiple orders and during the management of large events.	Do you ask/provide guidelines and equipment from/to you delivery team to avoid orders being mixed-up during delivery?	Does [this platform/mark etplace (type)] ask/provide guidelines and equipment from/to you delivery team to avoid orders being mixed-up during delivery?	Medium	Low
Mix-ups (mixed goods). Some platforms sell food and non-food products. It is unknown if food is being mixed with other products in a way that could lead to cross-contamination.	Do you have procedures to avoid food products being mixed with non-food products during transport/deliv ery?	Does [this platform/mark etplace (type)] have procedures to avoid food products being mixed with non-food products during delivery?	High	Medium
Mix-ups (allergens). Mix-ups of allergen and non-allergen items seem	Do you have procedures to avoid ingredients being mixed during	Does [this platform/mark etplace (type)] have procedures to avoid	Medium	Low

particularly feasible in the context of intermediated sales and outsourced delivery of food or management of food events/experiences (too many hands involved type of problem).	transport and service?	ingredients being mixed during transport and service?		
Vendor matching (foundational). Some platforms may deliver orders combining goods/services by multiple vendors, which may increase risks beyond the single-vendor model.	Do you provide logistical services that lead to you, your staff, personnel, partners, or associates combining products/offers by the vendors in your platform into single orders?	Does [this platform/marketplace (type)] combine/match products/services by the vendors in it?	Low	Medium

Vendor matching (traceability). Without due internal record-keeping by the platform, vendor matching activities may challenge traceability even further.	Do you keep detailed records of the ways in which you combine/match offers by different vendors in your platform?	Does [this platform/marketplace (type)] keep detailed records of the ways in which offers by different vendors in the platform are combined?	High	Low
Meta-aggregation (foundational). Platforms that complement their listings with products or services from other platforms might face added food safety and integrity challenges.	Do your listings include (outsourced) products/services by vendors external to your platform and/or from other platforms?	Does [this platform/marketplace (type)] list (outsourced) products/services by external vendors or from other platforms?	Low	Medium
Meta-aggregation (traceability). Platforms that	Do you keep detailed records of the products/servi	Does [this platform/marketplace (type)] keep detailed	Medium	Low

complement their listings with products or services from other platforms might represent a particularly poignant traceability challenge.	ces you outsource/aggregate from external vendors and/or other platforms?	records of the products/services it outsources/aggregates from external vendors or other platforms?		

Table 13: *Open/social marketplaces (Applicable to 'marketplace' intermediary platforms).*

Hazard	Self-assessment	Diagnosis	Impact (potential, health)*	Impact (potential, non-health)*
Illicit activities. Marketplaces are attractive for vendors who want to sell illegal food items.	Do you monitor listings to ensure no illegal food items are sold or otherwise traded through your marketplace?	Does [this platform/marketplace (type)] monitor listings to ensure no illegal food items are sold or otherwise traded through it?	Medium	High
Repeat offenders. Marketplaces	Do you require proof of ID or business	Does [this platform/marketplace (type)]	Medium	Low

not requiring proof of ID or registration from vendors may provide an opportunity for repeat offenders to continue business indefinitely.	registration from users as a pre-requisite to enabling the marketplace functionality?	require proof of ID or business registration from users as a pre-requisite to enabling the marketplace functionality?		

Assessment Form[2]

Assessment form

CLICK HERE TO RESET FORM

| VENDORS THAT DO **NOT** DELIVER NOR MANAGE FOOD EXPERIENCES | VENDORS THAT DELIVER AND/OR MANAGE FOOD EXPERIENCES | | PLATFORMS THAT DO **NOT** FACILITATE DELIVERY NOR EXPERIENCE/EVENT MANAGEMENT | PLATFORMS THAT FACILITATE DELIVERY OR EXPERIENCE/EVENT MANAGEMENT |

| PERSONAL | MSME | LARGE | | CLICK ONLY IF THE PLATFORM IS A **SOCIAL** MARKETPLACE |

FORMAT (BUSINESS-LEVEL)

FORMAT (TYPE-LEVEL)

Total risk score:

Answer the questions. The coloured boxes will provide you a rough estimate of the likelihood of facing a related food safety/integrity issue (which may harm others and lead to losses and penalties for you and/or your business). Do note that this form is entirely for you to self-assess your activities and self-reflect on them. If you answer incorrectly, you'd be lying to yourself.

Composite Risk Score

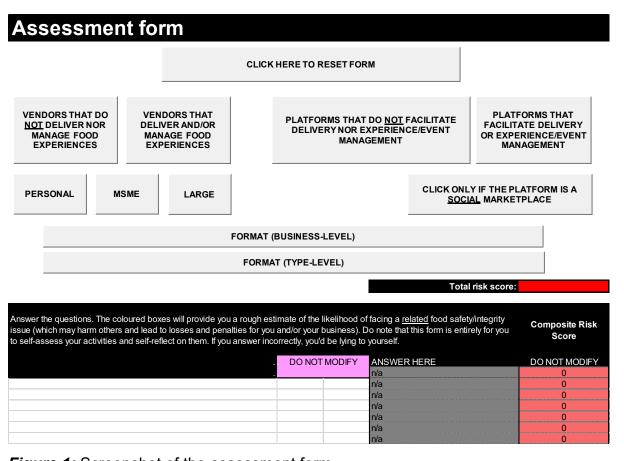|	.	DO NOT MODIFY	ANSWER HERE	DO NOT MODIFY
	.		n/a	0
			n/a	0
			n/a	0
			n/a	0
			n/a	0
			n/a	0
			n/a	0

Figure 1: Screenshot of the assessment form.

---

[2] In the original version of this file the assessment form contains actionable buttons by which to select the type of actor/business to analyse. Macros then populate the

Administrative sections[3]

Table 14: Tables needed for main file functionality.

Impact A
Low
Medium
High
Impact B
Low
Medium
High
Likelihood (assessment)
NO (or, 0% of this type of vendors/platforms)
MINIMALLY (or, < 1% of this type of vendors/platforms)
SOMETIMES (or, 1-10% of this type of vendors/platforms)
REGULARLY (or, 10-90% of this type of vendors/platforms)
ALMOST ALWAYS (or, > 99% of this type of vendors/platforms)
YES (or, 100% of this type of vendors/platforms)
n/a

form with applicable questions. In this file, a screenshot is given in lieu of the ability to offer working macros.

[3] The original file contains an additional section/sheet for functionality, with the contents declared below.