



General Assembly

Distr.: General
6 May 2022

Original: English

**United Nations Commission on
International Trade Law**
Fifty-fifth session
New York, 27 June–15 July 2022

Exploratory work on the impact of COVID-19 on international trade law

Contents

	<i>Page</i>
I. Introduction.	2
II. Disruption of the global economy and international trade	2
A. Work by other international organizations with linkage to UNCITRAL's mandate	3
B. Stocktaking: pandemic-related measures by States and treaty-based disputes	4
C. MSMEs and digitalization as two topics to be further explored.	5
D. Further work by UNCITRAL with linkage to COVID-19 measures	6
III. Proposed online platform to share experiences on COVID-19 measures.	6
A. Models.	6
B. Criteria	7
C. Results.	7
IV. Conclusion	8
Annex	
Systems and Software Quality Requirements and Evaluation	10



I. Introduction

1. At its fifty-third session, the Commission had before it a proposal regarding possible future work in connection with measures implemented by States in response to the coronavirus disease (COVID-19) pandemic. In particular, it was suggested that the Commission might wish to investigate whether those measures had exposed gaps or obstacles to cross-border trade and investment that could be overcome through work by UNCITRAL in harmonizing cross-border rules (A/CN.9/1039/Rev.1). After discussion, the Commission requested the secretariat to explore this proposal further.¹

2. At its fifty-fourth session, the Commission considered again the topic (on the basis of documents A/CN.9/1080 and A/CN.9/1081) and requested the secretariat to continue its exploratory work of (i) the issues identified in the progress report as possibly falling within the mandate of UNCITRAL and to continue to hold expert meetings and other events with interested stakeholders to further advance the exploratory work, (ii) and the options for establishing an online platform for information exchange by States.²

3. Accordingly, this note sets out further elements on the exploratory work regarding, first, issues related to the disruption of the global economy and international trade due to the COVID-19 pandemic, and second, the development of an online platform (see also the table in the annex). The Commission may wish to note that, as part of the preparatory work, a webinar on “ISDS Stocktaking: pandemic-related measures by States and treaty-based disputes” has been organized in November 2021. A second event entitled “Crisis Impact on International Trade Law: Covid-19 and beyond – MSME and Digitalisation” has been postponed, possibly to the second half of 2022, in the hope of being able to convene an in-person meeting.

II. Disruption of the global economy and international trade

4. States have taken various measures to contain the pandemic, ranging from restricting the movement of people and goods to lockdowns and closing down of non-essential services.³ The restriction of personal movement was one of the first responses taken at the beginning of the pandemic,⁴ leading to delays in restarting factories and sharp cutbacks in the service sector.⁵ With factories not operating optimally, leading to reduced output, economic activities (especially MSMEs) which use the output of the factories as their input were also impacted. Lockdown measures and the restriction on the movement and supply of non-essential goods and services also meant that economic activities which supply these non-essential goods and services saw reduced demand for their products.⁶ The impact on both demand and supply in turn led to difficulties in meeting contractual obligations, and additionally led to liquidity crises and insolvencies. Trade finance has also significantly suffered from the impact of the pandemic as the treatment of finance instruments is nowadays still mainly paper-based. With paper transfer having become difficult, trade finance transactions were severely hampered.

¹ *Official Records of the General Assembly, Seventy-fifth Session, Supplement No. 17 (A/75/17, part two)*, para. 89.

² *Ibid.*, *Seventy-sixth Session, Supplement No. 17 (A/76/17)*, para. 241.

³ OECD – A systemic resilience approach to dealing with Covid-19 and future shocks (2020), p. 5, available at www.oecd.org/coronavirus/policy-responses/a-systemic-resilience-approach-to-dealing-with-covid-19-and-future-shocks-36a5bdfb/#section-d1e337.

⁴ WHO – COVID-19 Situation Report 50 (2020), available at www.who.int/docs/default-source/coronaviruse/situation-reports/20200310-sitrep-50-covid-19.pdf.

⁵ OECD – Coronavirus: The world economy at risk (2020), p. 2, available at www.oecd-ilibrary.org/docserver/7969896b-en.pdf.

⁶ ITC – SME Competitiveness Outlook 2020 (2020) p. 29, available at: www.intracen.org/uploadedFiles/intracenorg/Content/Publications/ITCSMECO2020.pdf.

5. The findings of exploratory work undertaken by the secretariat (and previously reported to the Commission)⁷ showed that a number of measures implemented by States dealt with contractual obligations, possible insolvencies, access to credit and facilitating digitalization at various levels of the trade finance, transaction and transport chains. These measures had similar goals, with differences in the specific measures taken by each State, for example due to existing fiscal and social security policies. Following the publication of the Notes by the Secretariat [A/CN.9/1080](#) and [A/CN.9/1081](#), the impact of COVID-19 on international trade law has continued to receive attention from other international organizations, with a linkage to UNCITRAL's mandate and texts.

A. Work by other international organizations with linkage to UNCITRAL's mandate

6. The matter of contractual obligations during the COVID-19 pandemic has received considerable attention from other international organizations. The Economic and Social Commission for Asia and the Pacific (ESCAP) published a report exploring the approach taken by actors in the transport industry in dealing with contractual liability under pandemic-related State measures.⁸ This matter has also been the subject of a series of reports published by the United Nations Conference on Trade and Development (UNCTAD), also focusing on the transport industry.⁹

7. A report issued by the International Chamber of Commerce (ICC) has underscored the vulnerability of MSMEs to trade disruptions and the essential role of digitalization (including the adoption of paperless trade processes) in enhancing resilience.¹⁰ In this regard, research by the Asian Development Bank has identified the adoption of the UNCITRAL Model Law on Electronic Transferable Records (MLETR) as a means to accelerating trade digitalization, by way of standardizing the recognition of electronic transferable records.¹¹

8. In March 2022 the ICC and the World Trade Organization have jointly launched a Standards Toolkit for Cross-border Paperless Trade, which compiles existing standards used in paperless trade for easy reference by trade participants and highlights the importance of the MLETR to enable the legal use of electronic transferrable records both domestically and across borders and to accommodate the use of all technologies and of all models.¹²

⁷ See in addition to the Notes by the Secretariat [A/CN.9/1080](#) and [A/CN.9/1081](#), also the web page of the webinar, to be found at: <https://uncitral.un.org/en/events/webinar-covid-19-measures-implemented-states>.

⁸ UNESCAP – Implications of the COVID-19 pandemic for commercial contracts covering the transportation of goods in the Asia-Pacific region and beyond (2021), available at: www.unescap.org/sites/default/d8files/knowledge-products/Report_on_Implications_of_the_Covid-19_pandemic_on_commercial_contracts_Final_17JUN.pdf.

⁹ UNCTAD – COVID-19 implications for commercial contracts: Carriage of goods by sea and related cargo claims (2021) available at <https://unctad.org/webflyer/covid-19-implications-commercial-contracts-carriage-goods-sea-and-related-cargo-claims>; UNCTAD – COVID-19 implications for commercial contracts: International sale of goods on CIF and FOB terms (2021), available at: <https://unctad.org/webflyer/covid-19-implications-commercial-contracts-international-sale-goods-cif-and-fob-terms>; and UNCTAD – COVID-19 and maritime transport: Impact and responses (2021), available at <https://unctad.org/webflyer/covid-19-and-maritime-transport-impact-and-responses>.

¹⁰ ICC – Recent Trends in Trade and Trade Finance Impact of the Covid-19 Crisis and Challenges Ahead (2022) pp. 13–16, available at: <https://iccwbo.org/content/uploads/sites/3/2022/03/icc-document-impact-of-the-covid19-crisis-and-challenges-ahead.pdf>.

¹¹ ADB – Digitalizing Trade in Asia Needs Legislative Reform (2021), available at: www.adb.org/sites/default/files/publication/704041/digitalizing-trade-asia-legislative-reform.pdf.

¹² ICC and WTO, Standards Toolkit for Cross-border Paperless Trade, available at <https://iccwbo.org/publication/standards-toolkit-for-cross-border-paperless-trade/>.

9. The International Monetary Fund (IMF) has provided an empirical analysis on the relative resilience of digitally-enabled companies during the COVID-19 pandemic.¹³

10. In its annual report for 2021, the Global Alliance for Trade Facilitation reflected on the role of digitalization in overcoming the supply chain blockages and customs clearance problems which led to delays in the distribution of COVID-19 vaccines.¹⁴

B. Stocktaking: pandemic-related measures by States and treaty-based disputes

11. Additionally, considering that foreign investors were impacted by the States' restrictions, the secretariat organized a webinar on 15 November 2021 to explore the potential rise in investment arbitration claims brought against measures taken by States in mitigating the COVID-19 pandemic. In the absence of specific treaty-based provisions addressing the right by States to regulate in exceptional circumstances, two concepts under customary international law, namely the security exception and the necessity defence, were highlighted and discussed. Difficulties in the application of these concepts were identified, including the high threshold to be fulfilled and the diverging interpretation by tribunals. A pending investment claim related to COVID-19 measures was also touched upon and illustrated the relevance of the topic. While presentations and discussions focussed on substantive provisions of investment agreements that are not currently within UNCITRAL's mandate on ISDS reform,¹⁵ procedural tools such as the issuance of joint, non-binding interpretations or declarations by States on the impact of similar circumstances on regulatory activities and investment protection agreements were further discussed.

12. Two main themes emerged from the presentations: first, the necessity for consistency and coherence in the approach, under investment protection frameworks, of a State's regulatory powers in exceptional circumstances, such as the ones brought about by the COVID-19 pandemic; and second, the fact that only very few international investment agreements or multilateral instruments provide for clear rules to allow States to enact required regulations to address crises or other similar exceptional circumstances. Within that context however, the potential for UNCITRAL's existing work on reforming ISDS was highlighted, for instance the work aimed at minimizing disputes under those agreements. Examples include the UNCITRAL initiatives to facilitate dispute-prevention measures such as mediation and the recent Working Group III deliberations on streamlining topics such as early dismissal of investor-State dispute settlement (ISDS) claims and abuse of process, to minimize unmeritorious claims. While the presentations at this event were specific to

¹³ IMF – Digitalization and Resilience: Firm-level evidence during the COVID-19 Pandemic (2022), available at: www.imf.org/en/Publications/WP/Issues/2022/02/18/Digitalization-and-Resilience-Firm-level-Evidence-During-the-COVID-19-Pandemic-513169.

¹⁴ GATF – Annual Report 2021 (2022) pp. 36, available at: www.tradefacilitation.org/content/uploads/2022/04/global-alliance-for-trade-facilitation-annual-report-2021.pdf.

¹⁵ See *Official Records of the General Assembly, Seventy-second Session, Supplement No. 17 (A/72/17)*, para. 264, which outlines the mandate and reads as follows: "The Commission entrusted Working Group III with a broad mandate to work on the possible reform of investor-State dispute settlement. In line with the UNCITRAL process, Working Group III would, in discharging that mandate, ensure that the deliberations, while benefiting from the widest possible breadth of available expertise from all stakeholders, would be Government-led, with high-level input from all Governments, consensus-based and fully transparent. The Working Group would proceed to: (a) first, identify and consider concerns regarding investor-State dispute settlement; (b) second, consider whether reform was desirable in the light of any identified concerns; and (c) third, if the Working Group were to conclude that reform was desirable, develop any relevant solutions to be recommended to the Commission. The Commission agreed that broad discretion should be left to the Working Group in discharging its mandate, and that any solutions devised would be designed taking into account the ongoing work of relevant international organizations and with a view to allowing each State the choice of whether and to what extent it wished to adopt the relevant solution(s)."

ISDS, the overall observations of speakers were consistent with the general findings of earlier exploratory work as to: (1) the limitations of any multilateral, “one size fits all” solution to specific challenges of emergency regulation by States; and, as a result (2) the suitability of UNCITRAL’s past and present workplan to support States to take necessary regulatory measures in a crisis.

13. While the emphasis of the webinar lay on the potential rise in investment arbitration claims brought about regarding measures taken by States in mitigating the COVID-19 pandemic, the relationship between such measures with domestic trade activities was also touched upon. In this regard, attention was drawn to areas of law such as insolvency and contractual obligations, with particular attention towards micro, small, and medium enterprises (MSMEs).

C. MSMEs and digitalization as two topics to be further explored

14. It is well known that MSMEs face special challenges during a crisis such as the COVID-19 pandemic. The lack of collaterals held by MSMEs, combined with strict lending policies of formal financial institutions, lead to MSMEs having lower access to finance compared to larger enterprises, while the lower amount of resources available for adapting and financing operations already render MSMEs more vulnerable.¹⁶

15. The negative impact of the pandemic on enterprises of all sizes has further highlighted the role of electronic means and digitalization in bringing more resilience into trade¹⁷ including by the use of electronic forms of documentation and the sales of goods and services through online trading platforms. The containment measures taken during the pandemic have also accelerated the use of digital technologies and the development of platforms in dispute resolution.

16. Considering the strong impact of the COVID-19 crisis on MSMEs, their vulnerability and the responses and solutions offered by digitalization in various stages of transactions and trade, a two-day webinar event was planned to further explore (i) the impact of COVID-19 on MSMEs and (ii) digitalization. This event has been postponed possibly to the second half of 2022, in the hope of being able to convene an in-person meeting.

17. The event is a continuation of the exploratory work conducted in 2021 and focuses on, firstly, how existing UNCITRAL standards are fit-for-purpose to provide crisis response and recovery guidance and, secondly, how the use of existing UNCITRAL standards in global emergencies could be optimized and better used by States and contractual parties.

18. This event is planned to analyze two main issues: (a) what specific UNCITRAL texts may be useful to assist MSMEs in a crisis and what is needed to put together an emergency kit that could kick in at the outset of any emergency crisis, and (b) how UNCITRAL instruments can be utilized to facilitate digital commerce and paperless trade, and thereby reduce trade disruptions and bottlenecks in the event of a future global crisis.

¹⁶ ITC – SME Competitiveness Outlook 2020 (2020) p. 29, available at:

www.intracen.org/uploadedFiles/intracenorg/Content/Publications/ITCSMECO2020.pdf.

¹⁷ IMF – Digitalization and Resilience: Firm-level evidence during the COVID-19 Pandemic (2022), available at: www.imf.org/en/Publications/WP/Issues/2022/02/18/Digitalization-and-Resilience-Firm-level-Evidence-During-the-COVID-19-Pandemic-513169. See also: ADB –

Digitalizing Trade in Asia Needs Legislative Reform (2021), available at: www.adb.org/sites/default/files/publication/704041/digitalizing-trade-asia-legislative-reform.pdf.

D. Further work by UNCITRAL with linkage to COVID-19 measures

19. With respect to insolvency, the Commission may wish to recall that the Legislative Guide on Insolvency Law: Legislative Recommendations on Insolvency of Micro- and Small Enterprises has been finalized by Working Group V, in view of recovery measures taken in response to the COVID-19 pandemic.¹⁸

20. With respect to access to credit, the Commission may wish to recall that a future text on access to credit for MSMEs is being formulated by Working Group I, and as expressly mentioned in paragraph 3 of document [A/CN.9/WG.1/WP.124](#), the difficulties arising out of the COVID-19 pandemic constitute part of the contemplation of the purpose of the future text.

21. In the field of dispute resolution, the Commission may wish to recall that issues arising from the digitalization of dispute resolution, which was accelerated by the COVID-19 pandemic, were discussed extensively during the Colloquium on Possible Future Work on Dispute Settlement in Working Group II.¹⁹ Further, in light of the pandemic, the use of technological means in expedited arbitration has been explicitly permitted in article 3, paragraph 3, of the UNCITRAL Expedited Arbitration Rules²⁰ as well as in the article 4, paragraph 4, of the UNCITRAL Mediation Rules.²¹

22. Additionally, the Commission may wish to note that the General Assembly²², in its resolution [76/117](#) of 17 December 2021, invited Member States to focus their comments during the upcoming Sixth Committee debate on the subtopic “The impacts of the global coronavirus disease (COVID-19) pandemic on the rule of law at the national and international levels”.

III. Proposed online platform to share experiences on COVID-19 measures

23. As outlined in paragraph 3 above, the exploratory work regarding the development of an online platform as described in [A/CN.9/1081](#) has been ongoing, touching on aspects such as the feasibility and resource implications of the different models.

A. Models

24. The assessment was conducted on the five models described in paragraphs 4 to 7 of the Note of the Secretariat ([A/CN.9/1081](#)), namely (i) a dedicated page on the UNCITRAL website which could be used to post materials submitted by States; (ii) the posting of materials on existing password-protected pages, hosted on an external website; (iii) a new information repository system modelled after the existing Transparency Registry and the CLOUT system; (iv) an entirely new web-based system for the purpose of exchanging materials among States; and (v) round-table sessions or virtual panel series organized by the secretariat using a collaboration platform.

¹⁸ *Official Records of the General Assembly, Seventy-fifth Session, Supplement No. 17 (A/75/17, part two).*

¹⁹ See [A/CN.9/1091](#), report under preparation.

²⁰ See the report of Working Group II (Dispute Settlement) on the work of its seventy-second session (Vienna, 21–25 September 2020) ([A/CN.9/1043](#)), para. 95.

²¹ See report of Working Group II (Dispute Settlement) on the work of its seventy-third session (New York (online), 22–26 March 2021) ([A/CN.9/1049](#)), para. 69.

²² See resolution [76/117](#) of 17 December 2021 on the rule of law at the national and international levels, para. 2.

B. Criteria

25. The five models were assessed according to a common set of criteria derived from the standard formulated by the International Organization for Standardization for system and software quality models (ISO/IEC 25010:2011).²³ The criteria used were: (i) functional suitability; (ii) performance efficiency; (iii) compatibility; (iv) usability; (v) reliability; (vi) security; (vii) maintainability; and (viii) portability.

C. Results

26. The result of the work is set out in the table in the annex, with a presentation of the five models and the criteria against which the models were assessed. The table also contains an illustrative example of each model, as well as a specific elaboration on the criteria. For each criterion, one of three possible assessment results were assigned (low, medium, and high). The factors leading to the assessment result can be found under each assessment result indication.

27. The first model, using a dedicated page on the UNCITRAL website to post materials submitted by States, lacks real time interaction and offers only basic functionality. However, it has good performance efficiency (meaning that it has a good ratio between performance against the resources used as it involves no development costs, no licensing fees, no maintenance costs, and no additional or very limited human resource implications). It was also found to be highly compatible with other systems, highly usable (as it features a user-friendly responsive design), highly reliable (since it receives regular updates and support), easy to maintain (as it only requires basic training for maintenance), and highly portable (meaning it can be transported to another software environment with ease). However, this model scored low on security, as it lacks security and compliance capabilities, rendering it not suitable for sensitive or highly confidential data.

28. The second model, using a dedicated password-protected page hosted on an external website to post materials submitted by States, is as efficient as the first model. However, this model would be similarly as limited on functionality as the first model. In addition, this model also scored low on compatibility with other systems (as it uses a legacy content management system), usability (as its user interface was found to be out of date and lacking a responsive design), and reliability (as it lacks update and support). It was also found to be hard to maintain (as it requires advanced training for maintenance), and not easily portable (as it uses a legacy system, rendering it hard to transfer to another software environment). This model also shares the low score on security of the first model, as the access control is simple, and it lacks security and compliance capabilities, rendering it not suitable for sensitive or highly confidential data.

29. The third model, using a new information repository system modelled after the existing Transparency Registry and the CLOUT system, was found to offer slightly better functionality than the first two models, while still not offering real time interaction. This model was also found to score slightly better than the first two models in terms of compatibility and usability (as it uses a tailor-made system and due to it being customizable), reliability (as it is maintained by IT specialists, benefits from support – albeit limited – and can receive updates on request), maintainability (as it requires some training for maintenance), and portability (as it is a specialized, modern, tailor-made system, thus rendering it easier to transfer to another software environment). However, this model was found to have low efficiency (meaning a poor ratio between the performance and the amount of resources used) as it entails

²³ International Organization for Standardization. (2018). *Systems and software engineering – Systems and software Quality Requirements and Evaluation (SQuaRE) – System and software quality models* (ISO/IEC 25010:2011). www.iso.org/standard/35733.html.

significant development costs, licensing fees, maintenance costs, and additional human resource implications.

30. The fourth model, using an entirely new web-based system for the purpose of exchanging materials among States, shares the significant development costs, licensing fees, maintenance costs, and additional human resource implications of the third model (thus also sharing the low score on efficiency). It also shares the scores of the third model with respect to compatibility, usability, reliability, maintainability, and portability. This model was found to offer slightly better security (as it has an advanced multi-user access control), making it suitable for sensitive or highly confidential data. This model was also found to have better functional suitability as it can offer real time interaction and advanced functionality.

31. The fifth model, using round-table sessions or virtual panel series organized by the secretariat using a collaboration platform, retains the high score on functional suitability of the fourth model, while scoring slightly better on performance efficiency as it involves no development costs. This model also scored high on compatibility (as it uses an up-to-date collaboration system interface), usability (as it has a user-friendly interface incorporating responsive design), reliability (as it benefits from regular updates, support, and is maintained by IT specialists), security (as it offers advanced multi-user access control and advanced security and compliance capabilities, rendering it suitable for sensitive or highly confidential data), maintainability, and portability (as it uses an up-to-date system with broad support).

32. The Commission may wish to weigh its priorities among the criteria in considering the possible models. Only the fourth and fifth models fulfil the requirements set by the Commission, to be public, transparent, user-friendly and to allow for interaction between users, whether on the platform itself or through designated contact points (see A/76/17, para. 240). If options 4 or 5 are to be explored further, the Commission may wish to consider whether to determine how the State officials that have access to the online platform should be selected, or whether this should be left to each State.

IV. Conclusion

33. In light of the above, the Commission may wish to consider whether the exploratory work should continue, with a focus on specific areas, such as digitalization and MSMEs. UNCITRAL instruments, both existing and those being formulated, may contain elements which would be useful during times of crisis – the text on insolvency (see para. 19 above) is an example.

34. The Commission may wish to consider whether the continuation of this work could focus on identifying key components for an “emergency kit” consisting of legislative tools covering various areas of international trade law compiling or building on elements of UNCITRAL instruments which would be useful during a crisis and best practices developed by States and other international stakeholders.

35. Regarding the platform, the Commission may wish to note that the secretariat implemented the first model, by setting up a website (<https://uncitral.un.org/en/content/crisis-impact-international-trade-law-covid-19-and-beyond>). This website features (i) the questionnaire that had been circulated to States to inquire about their experience in terms of COVID-19 measures and identify obstacles to cross-border trade that had been encountered by businesses and the responses received thereto; (ii) those online round tables and events in cooperation with interested Governments that have been recorded; and (iii) the notes by the Secretariat and submissions by Governments that relate to projects on the impact of COVID-19 on international trade law. Governments may wish to make further suggestions regarding the information that could be posted on this website.

36. The Commission may wish to consider whether to explore further those models that allow for an interactive communication between States. If so, in light of the

significant budgetary implications, it may wish to consider whether a request for IT project resources should be submitted.

Systems and Software Quality Requirements and Evaluation

(ISO/IEC 25010:2011(en), Systems and software engineering – Systems and software Quality Requirements and Evaluation (SQuaRE) – System and software quality models)

		A dedicated page on the UNCITRAL website which could be used to post (password-protected) materials submitted by States	A dedicated password-protected page hosted on an external website which could be used to post materials submitted by States	A new information repository system modelled on the existing Transparency Registry and the CLOUT system	A new web-based system	A collaboration platform
	Examples	www.uncitral.un.org	www.unodc.org/missions/en/uncitral/information.html	www.uncitral.org/transparency-registry/registry/index.jsp (Transparency Registry) www.uncitral.org/clout/ (CLOUT Document Database)	<ul style="list-style-type: none"> • SparkBlue: SparkBlue is UNDP's digital platform for online engagement allowing its staff to collaborate across the international development landscape 	<ul style="list-style-type: none"> • Microsoft Teams
	Analysis	Para. 5, A/CN.9/1081 (regarding an open website option)	Para. 5, A/CN.9/1081	Para. 6, A/CN.9/1081		
Functional suitability	Degree to which a product or system provides functions that meet stated and implied needs	Low	Low	Medium	High	High
		<ul style="list-style-type: none"> • No real time interaction • Basic functionality 	<ul style="list-style-type: none"> • No real time interaction • Basic functionality 	<ul style="list-style-type: none"> • No real time interaction • Limited functionality 	<ul style="list-style-type: none"> • Real time interaction • Advanced functionality 	<ul style="list-style-type: none"> • Real time interaction • Advanced functionality
Performance efficiency	Performance relative to the amount of resources used	High	High	Low	Low	Medium
		<ul style="list-style-type: none"> • No development costs • No licensing fees • No maintenance costs • No additional human resource implications 	<ul style="list-style-type: none"> • No development costs • No licensing fees • No maintenance costs • No additional human resource implications 	<ul style="list-style-type: none"> • Significant development costs • Licensing fees • Maintenance costs • Additional human resource implications 	<ul style="list-style-type: none"> • Significant development costs • Licensing fees • Maintenance costs • Additional human resource implications 	<ul style="list-style-type: none"> • No Development costs • Licensing fees • Maintenance costs • Additional human resource implications
Compatibility	Degree to which a system can exchange information with other systems and/or perform its required functions	High	Low	Medium	Medium	High
		<ul style="list-style-type: none"> • Up-to-date content management system with interfaces 	<ul style="list-style-type: none"> • Legacy content management system 	<ul style="list-style-type: none"> • Tailor-made content management system • Customizable as required 	<ul style="list-style-type: none"> • Tailor-made content management system • Customizable as required 	<ul style="list-style-type: none"> • Up-to-date collaboration system with interfaces
Usability	Degree to which a product or system can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction	High	Low	Medium	Medium	High
		<ul style="list-style-type: none"> • User-friendly • Responsive Design 	<ul style="list-style-type: none"> • Out of date user-interface • No responsive design 	<ul style="list-style-type: none"> • Tailor-made usability • Customizable as required 	<ul style="list-style-type: none"> • Tailor-made usability • Customizable as required 	<ul style="list-style-type: none"> • User-friendly • Responsive design

		A dedicated page on the UNCITRAL website which could be used to post (password-protected) materials submitted by States	A dedicated password-protected page hosted on an external website which could be used to post materials submitted by States	A new information repository system modelled on the existing Transparency Registry and the CLOUT system	A new web-based system	A collaboration platform
Reliability	Degree to which a system performs specified functions under specified conditions for a specified period of time	High <ul style="list-style-type: none"> Maintained by IT specialists Regular updates Support 	Low <ul style="list-style-type: none"> Legacy system phasing out No updates No support 	Medium <ul style="list-style-type: none"> Maintained by IT specialists Updates on request Limited support 	Medium <ul style="list-style-type: none"> Maintained by IT specialists Updates on request Limited support 	High <ul style="list-style-type: none"> Maintained by IT specialists Regular software updates Support
Security	Degree to which a system protects information and data so that persons or systems have the degree of data access appropriate to their types and levels of authorization	Low <ul style="list-style-type: none"> No access-control No security and compliance capabilities Not suitable for sensitive or highly confidential data 	Low <ul style="list-style-type: none"> Simple access control No security and compliance capabilities Not suitable for sensitive or highly confidential data 	Low <ul style="list-style-type: none"> Simple access control Basic security and compliance capabilities Not suitable for sensitive or highly confidential data 	Medium <ul style="list-style-type: none"> Advanced multi-user access control Basic security and compliance capabilities Suitable for sensitive or highly confidential data 	High <ul style="list-style-type: none"> Advanced multi-user access control Advanced security and compliance capabilities Suitable for sensitive or highly confidential data
Maintainability	Degree of effectiveness and efficiency with which a product or system can be modified by the intended maintainers	High <ul style="list-style-type: none"> Basic training for maintenance required 	Low <ul style="list-style-type: none"> Advanced training for maintenance required 	Medium <ul style="list-style-type: none"> Training for maintenance required 	Medium <ul style="list-style-type: none"> Training for maintenance required 	High <ul style="list-style-type: none"> Basic training for maintenance required
Portability	Degree of effectiveness and efficiency with which a system can be transferred from one software environment to another	High <ul style="list-style-type: none"> Up-to-date proprietary system with broad support 	Low <ul style="list-style-type: none"> Legacy system 	Medium <ul style="list-style-type: none"> Specialized tailor-made system based on modern technology 	Medium <ul style="list-style-type: none"> Specialized tailor-made system based on modern technology 	High <ul style="list-style-type: none"> Up-to-date proprietary system with broad support