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Guidelines for virtual kitchen services

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

International Workshop Agreement IWA 40 was approved at a series of workshops hosted by the Standardization Administration of China (SAC), in association with China Council for the Promotion of International Trade Commercial Sub-Council (CCPIT-CSC), held virtually between April 2021 and January 2022.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The catering industry has traditionally evolved to meet the demands and desires of consumers for food in ever faster-paced lifestyles and to support them in their growing aspirations for a better life. However, the outbreak of the COVID-19 pandemic at the start of 2020 has caused partial and sometimes complete shut-down of restaurants and food and beverage (F&B) outlets in many parts of the world. The traditional catering industry has arguably been one of the most affected industries, as it has not been able to offer dine-in services for a long period. The pandemic has forced an increasing number of catering enterprises which previously focused on physical operations to evolve and participate in online catering services. During this period, there has been a considerable evolution in the business ideas and vocabulary used in the catering industry, with the appearance of concepts such as "contactless delivery", "employees sharing", "shared kitchen" and "virtual kitchen". The concept of a virtual kitchen is a more common business model of the comprehensive operations of virtual catering.

Unlike the characteristics of rapid scale and subversion under the traditional sharing economy, the virtual kitchen operator functions both as a catering service provider and a consultant. Because of the impact of the COVID-19 pandemic, the virtual kitchen business model has evolved into an excellent platform for traditional catering restaurants to recuperate business and further integrate into online operation more quickly and at lower cost.

The emergence of the virtual kitchen has also created new issues related to supervision which are different from those faced by the traditional catering industry. For example, in the context of intensive catering operations, how to formulate operational standards on aspects such as sharing, transparency, equipment and the facilities assembly line.

Developed in the context outlined above, this document aims to help resolve issues related supervision in virtual kitchen businesses. It is based on good practices used in the catering industry worldwide.

This document supports the implementation of the United Nations Sustainable Development Goals SDG8 (Decent Work and Economic Growth), SDG11 (Sustainable Cities and Communities) and SDG12 (Responsible Consumption and Production).

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Guidelines for virtual kitchen services

1 Scope

This document provides guidelines on principles, processes and practices relevant to meeting the safety and quality standards required of virtual kitchen services.

This document applies to virtual kitchen operators and is also intended to serve as a reference for other stakeholders, such as virtual restaurants.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 virtual kitchen

commercial cooking space without a dine-in or retail option, providing a centralized, standardized and digitized catering service with hardware and software support facilities and/or site resources for multiple *virtual restaurants* (3.3) to share resources for catering operations

3.2 virtual kitchen operator operator

enterprise that provides a *service field* (3.5), facility and an online information service for *virtual restaurants* (3.3), with value-added services such as supply chain and equipment management, compliance management and consulting

3.3 virtual restaurant

main body that carries out catering business activities through a *virtual kitchen* (3.1) and that includes individuals, enterprises and other organizations

3.4 supplier

organization or individual that provides raw materials, essential equipment, software services, logistics services and other related services for *virtual kitchen operators* (3.2) and *virtual restaurants* (3.3)

3.5 service field

infrastructure site provided by the *virtual kitchen operator* (3.2) that can be operated by virtual restaurants, including essential catering processing equipment, water, electricity and gas systems and other conditions necessary for the catering working environment

4 Principles

4.1 Standardized approach

The operator should provide a standardized infrastructure and supporting services.

4.2 Safety

The operator should provide a safe and stable service field and online business environment that meet applicable requirements.

The virtual restaurant should assume the primary responsibility for food safety.

4.3 Compliance

The operator should ensure that all issues related to aspects such as food safety, fire safety, consumer rights protection, network security and environmental protection are addressed. Compliance in these areas can be subject to legal requirements.

4.4 Integration

The operator should create centralized cooking spaces for virtual restaurants by providing resources and services such as venues, equipment and facilities.

4.5 High efficiency

The operator should maintain high efficiency in the opening, management and operation of virtual restaurants by providing integrated services such as venues, equipment and facilities, operation management and digital product development.

4.6 Social responsibility

The operator and virtual restaurants should be actively committed to activities related to social responsibilities, including, but not limited to, resource conservation and environmentally sustainable development by providing integrated, intelligent and green resources.

5 Service process

5.1 General

[Figure 1](#) shows an example of the virtual kitchen service process.

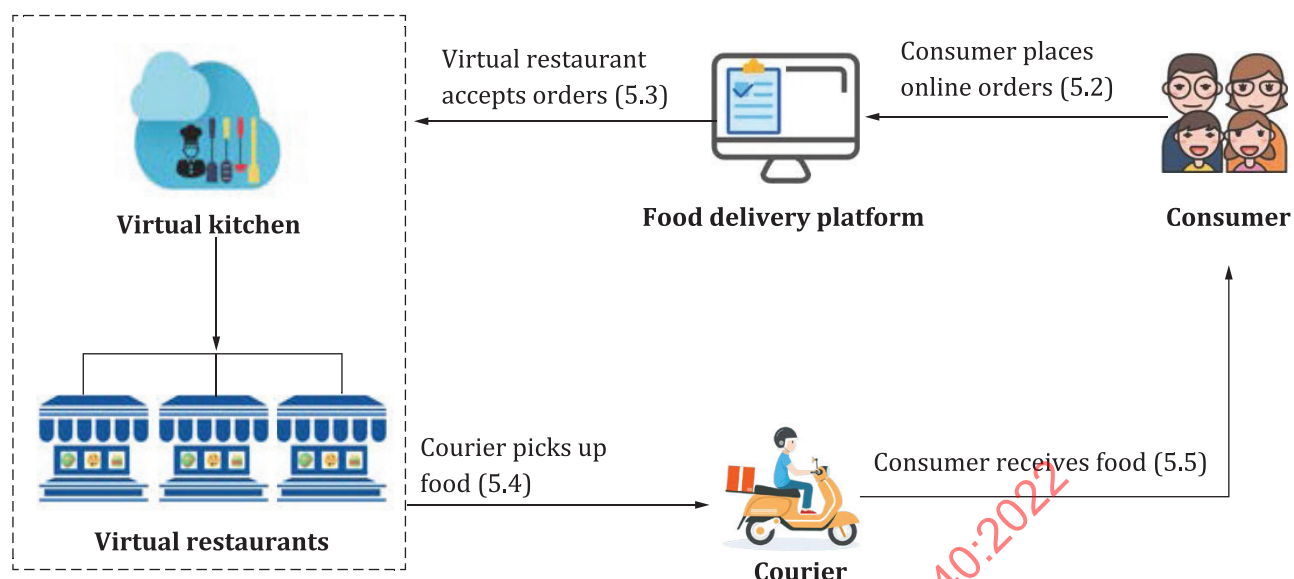


Figure 1 — Example of virtual kitchen service process

5.2 Consumer places online orders

Consumers can place an order on the food delivery platform.

Consumers can choose or request contactless delivery services when placing an order.

5.3 Virtual restaurant accepts orders

Virtual restaurants should accept the orders and prepare the food according to the online information. They should deliver the food by their own means or through the relevant platform.

5.4 Courier picks up food

Couriers should pick up the food from the designated virtual restaurant and deliver the food according to the order information on the food delivery platform. Local food safety requirements can apply to ensure food safety from the virtual kitchen to the table.

If the consumer chooses or requests contactless delivery services, couriers should pick up and deliver food in accordance with the guidance of IWA 36.

5.5 Consumer receives food

After receiving the delivery details from the courier, the consumer receives or picks up the food from the courier at the designated place. In this way the service is completed.

6 Service provision

6.1 Information provision and verification

6.1.1 The operator should provide guidance to virtual restaurants for obtaining information on aspects such as registration, operation and payment.

6.1.2 The operator should take necessary technical measures and other actions to verify the information on qualifications of the virtual restaurants.

6.1.3 The operator should organize regular training for virtual restaurants and relevant personnel with respect to registration, information filling, information acquisition, information disclosure and awareness of applicable laws and regulations.

6.1.4 The operator should strengthen the information management issued by virtual restaurants and verify the shop information and menu information of the virtual restaurants.

6.2 Supply chain and equipment management

The operator should provide equipment procurement and allocation services for the established virtual restaurants according to their needs, including new equipment, used equipment and customized equipment.

6.3 Brand design and marketing

6.3.1 The operator can provide brand design services to virtual restaurants that are seeking to establish themselves, including, but not limited to, the following:

- brand logo, functional website to establish brand presence and reach out to customers and stakeholders;
- sign design, e.g. signboards, guide signs, stickers;
- graphic design, e.g. brand wall, business information, wall menu;
- food photography.

6.3.2 The operator can provide publicity and design services for virtual restaurants, including background image, posters, logo design, basic visual identification design and packaging design.

6.3.3 The operator should plan promotional activities for virtual restaurants on a regular or an impromptu basis.

6.4 Transaction services

The operator should establish an online payment system for virtual restaurants. An electronic payment service should be provided by banks or legally qualified non-financial payment institutions.

6.5 Supervision and assessment

6.5.1 The operator should establish a food safety inspection mechanism, equipped with necessary fixtures and materials.

6.5.2 The operator should require virtual restaurants to set up a food sample retention system to monitor and analyse the quality of raw materials, semi-finished products and finished products, as well as the environmental sanitation of virtual restaurants.

6.5.3 The operator should establish a regular inspection and irregular spot check system for virtual restaurants. The operator should inspect the food hygiene of virtual restaurants. They should make spot checks of the health certificates of the food practitioners of virtual restaurants to ensure that they are valid and establish archives for good management.

6.5.4 The operator should establish an assessment mechanism for virtual restaurants and give rewards or punishments according to the business behaviour of virtual restaurants.

6.6 Exit mechanism

6.6.1 The operator should establish an exit mechanism for virtual restaurants, to ensure complete voluntary exit or forced exit of a virtual restaurant in case of law violation.

6.6.2 If a virtual restaurant meets the exit criteria, the operator should conduct an exit settlement with the virtual restaurant concerned.

6.6.3 The operator should compel virtual restaurants that fail to comply with contractual obligations or that seriously violate the on-site operation standards to exit.

6.7 Emergency management service

6.7.1 The emergency work of the operator should conform to the basic principles of human-oriented, prevention-oriented, unified command and timely response. It should combine self-rescue with social rescue.

6.7.2 The operator should establish an emergency response plan, including for fire emergency, food safety emergency and public health emergency.

6.7.3 The operator should provide emergency support services for virtual restaurants, including, but not limited to, communication and information support, emergency team support, emergency materials, equipment support, technical support and logistics support.

6.7.4 For emergency events caused by force majeure factors, the operator should take targeted measures to provide essential protection for the established virtual restaurants.

6.8 Compliance management

Compliance management should be implemented in order to ensure that aspects such as food safety, environment safety and network security are guaranteed. This should include, but not be limited to, daily monitoring, regular or impromptu inspection, conformity assessment and crisis management in case of emergency.

7 Information security and protection

7.1 Information security

7.1.1 The operator should establish an information security management system and take effective security management and protection measures for the information managed by the operator and the information provided by virtual restaurants and consumers.

7.1.2 The operator should take appropriate technical measures to properly preserve the information collected during the operation and take adequate steps to ensure the accuracy, completeness and safety of the above information.

7.1.3 The storage time of the audit data and identity information submitted by virtual restaurants to the operators should be not less than two years from the date of their last submission. The retention time of the financial payment and other information of virtual restaurants should not be less than three years from the date of the transaction.

7.1.4 The operator should ensure that virtual restaurants are requested to provide their operation information within the duration of the storage period.

7.1.5 The operator should cooperate with the relevant work carried out by the competent information security agency. Information security can be subject to legal requirements.

7.2 Information protection

7.2.1 The operator and virtual restaurants can fulfil their obligation to protect relevant information by formulating privacy policies and executing confidentiality agreements.

7.2.2 The scope of information protection generally includes virtual restaurants, business data, product planning, strategic planning, operation strategy, system structure, algorithm logic, software version, internal system, financial data, organizational structure, personnel information and internal image data.

7.2.3 The operator may publish the information with the consent of virtual restaurants. Information protection can be subject to legal requirements.

7.2.4 The operator should allow virtual restaurants to access and modify personal information, including correcting inaccurate information. Users should be allowed to cancel their accounts after the exiting of virtual restaurants.

7.2.5 The operator should establish an emergency plan and mechanism for information security incidents.

8 Quality control and improvement

8.1 Service evaluation

8.1.1 The operator should provide online and offline service evaluation collection channels for virtual restaurants. The evaluation contents should include, but not be limited to, the following:

- rating the facilities, environment, management and services of the operator;
- other subjective opinions and suggestions of virtual restaurants.

8.1.2 The operator should provide effective channels for complaints and appeals to the tenants. The operator should protect the legitimate rights and interests of the tenants from infringement by the operator, other tenants and suppliers.

8.2 Continuous improvement

8.2.1 The operator should accept or reject the content of a virtual restaurant's service evaluation. The operator should inform virtual restaurants without delay of the evaluation results and explain the reasons.

8.2.2 The operator should regularly collect feedback information on the virtual restaurants, so as to establish an effective solution mechanism for dealing with the issues that are raised.