© International Baccalaureate Organization 2023

All rights reserved. No part of this product may be reproduced in any form or by any electronic or mechanical means, including information storage and retrieval systems, without the prior written permission from the IB. Additionally, the license tied with this product prohibits use of any selected files or extracts from this product. Use by third parties, including but not limited to publishers, private teachers, tutoring or study services, preparatory schools, vendors operating curriculum mapping services or teacher resource digital platforms and app developers, whether fee-covered or not, is prohibited and is a criminal offense.

More information on how to request written permission in the form of a license can be obtained from https://ibo.org/become-an-ib-school/ib-publishing/licensing/applying-for-a-license/.

© Organisation du Baccalauréat International 2023

Tous droits réservés. Aucune partie de ce produit ne peut être reproduite sous quelque forme ni par quelque moyen que ce soit, électronique ou mécanique, y compris des systèmes de stockage et de récupération d'informations, sans l'autorisation écrite préalable de l'IB. De plus, la licence associée à ce produit interdit toute utilisation de tout fichier ou extrait sélectionné dans ce produit. L'utilisation par des tiers, y compris, sans toutefois s'y limiter, des éditeurs, des professeurs particuliers, des services de tutorat ou d'aide aux études, des établissements de préparation à l'enseignement supérieur, des fournisseurs de services de planification des programmes d'études, des gestionnaires de plateformes pédagogiques en ligne, et des développeurs d'applications, moyennant paiement ou non, est interdite et constitue une infraction pénale.

Pour plus d'informations sur la procédure à suivre pour obtenir une autorisation écrite sous la forme d'une licence, rendez-vous à l'adresse https://ibo.org/become-an-ib-school/ib-publishing/licensing/applying-for-a-license/.

© Organización del Bachillerato Internacional, 2023

Todos los derechos reservados. No se podrá reproducir ninguna parte de este producto de ninguna forma ni por ningún medio electrónico o mecánico, incluidos los sistemas de almacenamiento y recuperación de información, sin la previa autorización por escrito del IB. Además, la licencia vinculada a este producto prohíbe el uso de todo archivo o fragmento seleccionado de este producto. El uso por parte de terceros —lo que incluye, a título enunciativo, editoriales, profesores particulares, servicios de apoyo académico o ayuda para el estudio, colegios preparatorios, desarrolladores de aplicaciones y entidades que presten servicios de planificación curricular u ofrezcan recursos para docentes mediante plataformas digitales—, ya sea incluido en tasas o no, está prohibido y constituye un delito.

En este enlace encontrará más información sobre cómo solicitar una autorización por escrito en forma de licencia: https://ibo.org/become-an-ib-school/ib-publishing/licensing/applying-for-a-license/.

https://xtremepape.rs/

Diploma Programme
Programme du diplôme
Programa del Diploma

# Information technology in a global society
# Case study: The return of the physical retail store

For use in May and November 2023

---

**Instructions to candidates**

- Case study booklet required for higher level paper 3 information technology in a global society examinations.



5523 – 5501
© International Baccalaureate Organization 2022

International Baccalaureate®
Baccalauréat International
Bachillerato Internacional

https://xtremepape.rs/

**Foreword**

The ITGS case study, *The return of the physical retail store*, is the stimulus material for the research investigation required for May 2023 and November 2023 higher level paper 3. All of the work related to the case study should reflect the integrated approach explained on pages 15–17 of the ITGS guide.

Candidates should consider *The return of the physical retail store* with respect to:
- relevant IT systems in a social context
- both local and global areas of impact
- social and ethical impacts on individuals and societies
- current challenges and solutions
- future developments.

Candidates are expected to research real-life situations similar to *The return of the physical retail store* and relate their findings to first-hand experiences wherever possible. Information may be collected through a range of activities: secondary and primary research, field trips, guest speakers, personal interviews and email correspondence.

Responses to examination questions **must** reflect the synthesis of knowledge and experiences that the candidates have gained from their investigations. In some instances, additional information may be provided in examination questions to allow candidates to generate new ideas.

https://xtremepape.rs/

**Overview**

Although there has been a significant increase in the number of customers who shop online, research by *Salesforce*, a popular customer relationship management platform, suggests that customers of all ages, including 62 % of Baby Boomers and 58 % of Generation Z, still prefer to make their purchases in a physical store.

The retail industry is highly competitive, and retailers are finding it difficult to stand out. Some retailers think that upgrading their physical stores is a better way of creating an engaging experience so that their customers can be immersed in their brand culture. It is apparent that the future success of physical stores may be dependent on a retailer's willingness to embrace change.

**Current situation**

*MCA Sports* is a retailer based in Europe. They sell a variety of products, including sports clothing, footwear and wearable technologies. The first *MCA Sports* store opened in 1980, and there are currently over twenty physical stores in five European cities.

According to customer feedback, one of the strengths of *MCA Sports* is the service that customers receive when in the physical stores.

*MCA Sports* is considering using digital technologies in their physical stores to enhance the customer experience and future-proof their business.

**Next steps: upgrading the flagship store**

In March 2022, *MCA Sports* recruited Madeleine Starc as the Chief Executive Officer. Her brief was to make *MCA Sports* a brand leader. Madeleine's previous job was in the high-tech industry, and her first change was to recruit André Eglise as IT Manager. André had experience in delivering projects using emerging technologies, such as augmented reality (AR) and customer service robots.

Madeleine's vision is to deliver an engaging and immersive in-store customer experience. As a technological determinist, she passionately believes that digital engagement through technological innovation will offer both excitement and convenience for customers. This will provide a competitive advantage for *MCA Sports*. Madeleine has asked André to lead the upgrade project to transform the physical store in Geneva, Switzerland. This store was chosen due to the city's cultural diversity: Switzerland has four official languages, with many more spoken as well, and Geneva is inhabited by citizens of over 150 nationalities. Madeleine plans to eventually upgrade all the other *MCA Sports* stores as well.

The Geneva store will become *MCA Sports*' flagship store and will incorporate four new technologies:

- Augmented reality (AR) solutions
- An in-store companion app
- Customer service robots
- Smart shelves



https://xtremepape.rs/

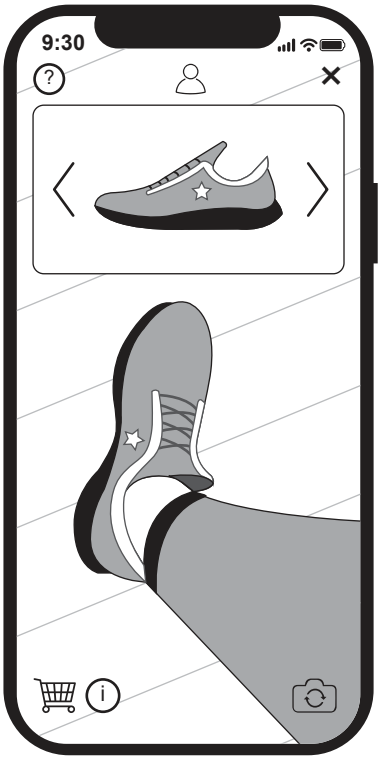
Augmented reality solutions include augmented reality mirrors. These will enable shoppers to project their images onto a large screen and virtually try on different items of clothing (see **Figure 1**).

**Figure 1: An augmented reality mirror**

40 The in-store companion app will use augmented reality to overlay information about each item of clothing. The app can only be used when customers are physically in the store. It will provide real-time information, including product availability (see **Figure 2** and **Figure 3**).

**Figure 2: An in-store companion app**

**Figure 3: An in-store companion app with augmented reality functionality**



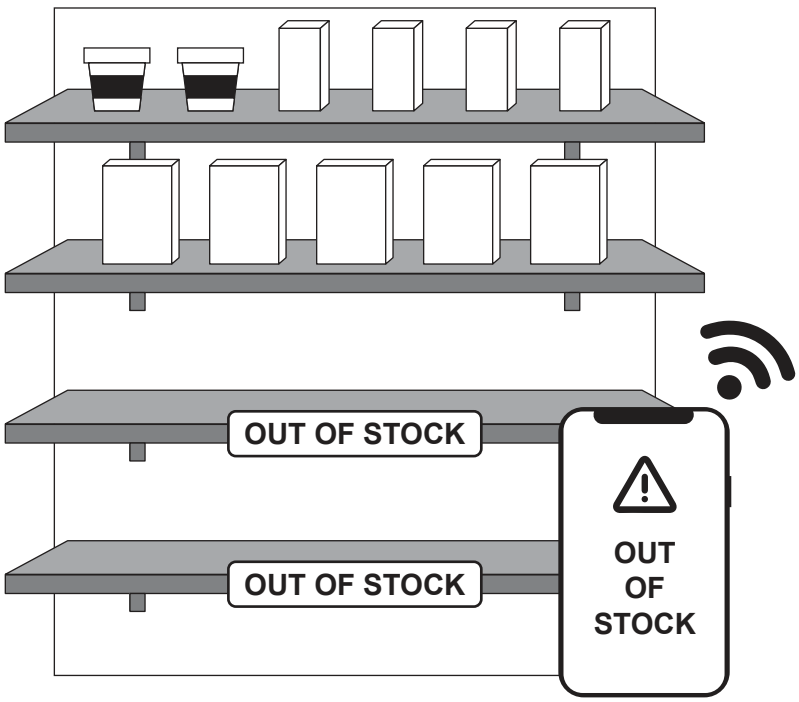

https://xtremepape.rs/

Customer service robots will use natural language processing to greet customers, answer questions and guide customers around the store. They will be able to recognize and process
45 requests in Chinese, English, French, German, Italian and Romansh (see **Figure 4**).

**Figure 4: A customer service robot used in store**

Currently, *MCA Sports* has a centrally managed stock inventory system and utilizes radio frequency identification (RFID) tags and technologies. Smart shelves will make further use of these existing technologies and gather more information about customer behaviour, thereby improving inventory management (see **Figure 5**).

**Figure 5: An example of smart shelving**






https://xtremepape.rs/

Madeleine anticipates that, once customers are in the flagship store, these technologies will lead to an increase in sales. She also expects this to increase the number of customers using *MCA Sports*' online store.

Madeleine has set up a committee to carry out a feasibility study for the upgrade project. In addition to André, she has invited Loic Rossignol, the Data Protection Officer, to join the committee. Loic is concerned that the four new technologies will lead to the collection of more personal data from customers. Madeleine has also invited Carol Aujean, the manager of the Geneva store, as she has an insight into the behaviours of existing staff and customers.

At the start of the first committee meeting, André presented the proposal for the introduction of the four new technologies. However, the proposal was not met with the level of enthusiasm that he had anticipated, with Loic and Carol raising a number of concerns. By the end of the meeting, there were several unanswered questions, and André realized that getting everyone to support the proposal would be extremely difficult. To gain an understanding of the nature of Loic and Carol's concerns, André plans to produce a comprehensive stakeholder analysis matrix.

Madeleine is confident that the plans for the flagship store will be a huge success and has tasked the committee with investigating the possible challenges faced at the next meeting.

**Challenges faced**

The committee at *MCA Sports* need to determine whether the:

- new in-store technologies will integrate with the existing radio frequency identification (RFID) stock management system
- new in-store technologies will enhance the customer experience as anticipated
- customer service robots will be able to provide an equivalent or better level of service than the customers are already receiving
- collection of increased quantities of data about customer behaviours and stock inventory will lead to an enhanced customer experience
- collection of increased quantities of customer data will meet the data protection requirements for the company
- customers will want to use the new in-store technologies
- staff in the Geneva store will have the opportunity to be involved at each stage of the upgrade project
- staff will embrace the new in-store technologies
- new in-store technologies may be culturally insensitive.

**Technological background**

Students will only need to consider augmented reality (AR) technologies. They do not need to investigate virtual reality (VR) technologies.

**Additional terminology**

Many of these terms are not explicitly stated in the case study but are included to provide teachers and students with areas to explore within the contexts of the challenges faced.

https://xtremepape.rs/

**Additional terminology**

Augmented reality (AR)
Companion app
Customer service robots
Interoperability
Smart shelving
Stakeholder analysis matrix
Stock inventory system
Technological determinism
Technological skepticism

Any individuals named in this case study are fictitious and any similarities with actual entities are purely coincidental.

https://xtremepape.rs/

**Disclaimer:**

Content used in IB assessments is taken from authentic, third-party sources. The views expressed within them belong to their individual authors and/or publishers and do not necessarily reflect the views of the IB.

**References:**

**Figure 4** Tokumeigakarinoaoshima, 2014. *Service-Roboter Pepper*. [online] Available at: https://commons.wikimedia.org/wiki/File:SoftBank_pepper.JPG. CC0 1.0 https://creativecommons.org/publicdomain/zero/1.0/deed.en.

https://xtremepape.rs/