

Unit 8, Assignment 1

Thomas Robinson

SOLIHULL COLLEGE

P2 - Impact of Introducing IT

There will be several benefits to setting up an E-Commerce platform for the Hockley Watch Emporium.

A major advantage over a physical store is being able to reach more people; anyone around the world can visit your online store—not just people nearby. The online market is vastly more competitive since this broader demographic can also purchase products at any time, not just when the shop is open. You are potentially competing against thousands of other businesses in the sector, however, so it is harder to stand out.

An online e-commerce shop requires less upkeep cost when compared to a physical store: less staff are required and there is no need to pay for maintaining a building. It is not possible to shoplift from an online platform, providing there are no issues with the underlying system. With an online platform, it is a lot easier to track customers throughout their visit, this allows one to gather data about shopping habits and personalise the visitor experience.

Yet another benefit of an e-commerce website is the ability to have alternative income sources. By renting ad space on your online storefront, you could earn money depending on how many people click.

Whilst an e-commerce website has a vast array of benefits, it is not without drawbacks.

When dealing with a global audience, there are various pieces of financial legislation that will complicate the selling process. False reviews can hamper the wider public perception of the business and buyers providing illegitimate information can also make selling a frustrating task. Some demographics might have less trust in an online business, particularly those unfamiliar with technology. In the same vein, those used to running a physical store may struggle to adapt to selling online.

M1 – Promotion Methods

To promote Hockley WE's e-commerce business, they could make use of a wide array of advertising methods.

Direct Marketing refers to advertising to specific, targeted groups of people.

Social media platforms—such as Facebook, Twitter, Instagram, Snapchat—allow targeting groups of people based on their age, interests, location and other demographics. The Watch Emporium could, for example, specifically target social media users who are interested in watches and are located in countries they are happy to sell to.

Another example of direct marketing is sending out email campaigns. These could be offering loyalty bonuses and promotions to existing customers or by sourcing email lists of people who may be interested in the company. The latter option is often regarded as unethical, however; unsolicited advertising emails are the digital equivalent to junk mail and are very rarely appreciated.

Both advertising on social media platforms and performing email campaigns will allow the tracking of performance and click-through-rates over time. This would allow the business to lean into strategies and ideas that are more effective, while focussing less on those that don't work.

Direct marketing options can often provide near-instant results and are commonly not too expensive to experiment with. They are quickly adaptable to market conditions and customer demands and can reach an exceptionally large audience.

Search Engine Optimisation is the process of making a website more likely to appear at the top of search engine results pages. A search engine is a website like Google, Yahoo, Bing, DuckDuckGo, etc. Very few people click onto the second page of the results and beyond, so it is vital that your website ranks on the first page.

The first step to take is registering Hockley's website in the appropriate webmaster administration tools provided by the search engines. This will allow them to see which keywords users are finding their website using, and which pages are most popular.

Meta Tags

Secondly, the website needs to have appropriate 'meta tags' on each page. These are codes embedded in the HTML source code of the website that search engine 'crawlers' use to figure out what the page is about at a high-level.

Common tags include the description tag (for describing the page or item), the author tag (for describing who wrote the document) and the keywords tag (for a list of keywords relating to the page).

Search Engine Ads

Many search engines often offer direct marketing opportunities as well. Most commonly, the ads appear above the 'organic' search results. As an example, Hockley could place an ad which appears above a search for 'gold engraved watches.' The page a user visits after clicking on such an advert is called a landing page, and should be designed to keep the visitor on the website and turn them into a customer.

P3/M2 - Risks to the Organisation

Hacking

- Refers to gaining unauthorised access to a computer system
- Unlawful
- Often done for financial gain, or simply to show off one's ability

Overcome by making sure software is up to date (patched vulnerabilities) and having regular backups in the event that something does happen. Could hire white-hats to search for vulns. Firewall software can help too – block external access to ports that are only needed internally (eg: database).

DDOS Attacks

- Aims to take down a website or render it inoperable (deny service).
- Overwhelms capabilities of webserver/network (can only handle so many req/s)
- May last extended periods of time – perpetrators may want ransom to stop
- Can simply be caused by too many people innocently visiting a website at once (hug of death)

Mitigated by using proxy/CDN services such as CloudFlare or Akamai – they handle traffic and cache content when possible.

Viruses

- Like a real-life virus, replicates itself in many places on a computer
- Often attaches to a vulnerable piece of software
- Can cause damage (acting as part of a botnet to perform a DDOS attack) for fun or for profit (ransomware that blackmails users/companies)
- On servers or on employee devices
- Worms – type of virus that spreads to other people/computers unknowingly
- Trojans – viruses disguised as legitimate programmes (free screensavers!!)

Overcome by appropriate anti-virus software (Win Defender built in) and performing due diligence when downloading files and accessing websites.

Identity Theft

- Obtaining enough information about a party to be able to impersonate them.
- Examples:
 - With passport + driving license could potentially open bank accounts.
 - With social media account information could trick followers (who trust) into doing shady things

Overcome by only storing information about customers and employees that is absolutely necessary. Storing information securely (encrypted, behind MFA).

SSL Certificates

- Secure Socket Layer
- Encrypts content between user and website
- Without SSL, all information sent in plaintext and can be read by anyone along the line. Like a linesman wiretapping a phone line.
- Website inaccessible if setup incorrectly (not renewed, etc)
- Available for free and easy to setup, no reason not to.
- Absolutely mandatory if taking PII (personally identifiable information) from customers.

Passwords & Brute-Force Attacks

- Brute force attacks are hackers trying many different username/password combinations in quick succession aiming to find one that works
- Often using user/pass combinations from previous data breaches

Brute-Force attacks mitigated by appropriate rate-limiting and intrusion-prevention systems (checking the style and 'humanness' of requests – are they happening unnaturally every X seconds?). 'Are you a robot'

CAPTCHAs.

- Passwords should not be stored in plaintext when saved in the database (irreversible hash).
- Users should not share passwords across multiple sensitive websites.
- Password managers can generate and save complex passwords in a secure manner.

Social Engineering

- Obtaining information from someone by gaining their trust and exploiting it

- Targeting weaknesses in the person not their devices

Mitigated by training employees appropriately – never give out passwords or sensitive information.

Legislation

- Shipping internationally may incur additional charges
- Follow rules of all countries selling to

Logistics

- If demand is high, may not be enough room to store product
- How is delivery handled?

P1 – Infrastructure Needed for an E-Commerce Business

Web Servers

Web servers are a piece of software running on a host. They accept and interpret HTTP(S) web traffic from visitors.

Cabling

- **Ethernet** cables send information using electricity over copper wires. They're cheap to manufacture, but not the fastest and over a longer distance the signal is prone to interference, lowering capacity.
- **Fibre Optic** cabling send information by bouncing light down transparent glass tubes. They are more expensive to manufacture, but their bandwidth is significantly greater than ethernet and there is essentially no signal degradation over long distances (even across oceans). Multiple signals can be sent down the same 'strand' of fibre by adjusting the colour or the wavelength of the light. The light can be sent using LEDs or lasers.

Terms

- **Bandwidth** refers to the maximum amount of data that can be sent over a connection in a given amount of time.
- The **bitrate** of a connection is how many bits can be sent per X amount of time; usually measured in bits-per-second.
- The **latency** of a connection is how long the signal takes to travel from the source to the destination.

Components

- **Routers** distribute ('route') network traffic to the correct device on a network. Often, they will also perform the task of a DHCP server (giving out IP addresses).
- **Switches** allow more devices to connect to a wired network by 'switching' packets.
- **Hubs** are like less intelligent switches; they do not 'switch' packets to the correct device, instead broadcasting all data on all ports.
- **Wireless Access Points** allow devices to connect to a network wirelessly using radio waves.

Web Browsers

Web browsers such as Firefox, Chrome, Edge and Safari are what visitors to the website use to browse and view the internet and your website.

Web Server

Web servers such as Apache, NGINX and Microsoft IIS are applications that process requests and 'serve' the website. They are ran on specialised server operating systems such as Linux and Windows Server.

TCP/IP & Ports

TCP and IP are both protocols that dictate how devices on a network communicate.

Port Numbers are used to send and receive traffic – like a letter box on a house is used to receive mail. Some ports are used for certain traffic.

Web Authoring Tools

Editors such as Sublime Text, Visual Studio Code, Atom and Dreamweaver are designed for writing code and have syntax highlighting, autocomplete and auditing tools to help one write code more efficiently.

Online drag-and-drop tools such as Wix, Squarespace and Weebly allow people with no programming or design experience to create websites quickly and easily. They are often more expensive with limited options and may be difficult to move from away from in future.

Database Systems

A database is used to store information, such as the current stock of inventory of the store, user information, transactions and logs. They store information in tables and rows.

Examples of database servers include Postgres and MySQL.

D1 – John Lewis ‘Brick and Click’

Sales Value & Profits

Coronavirus

The coronavirus pandemic adversely affected John Lewis in a significant way. The Partnership – which also owns the upmarket Waitrose supermarket chain – reporting an overall loss of £517million before tax in the 2020/21 period. These losses were on top of already existing declines in profits over the past years, leading the company to close physical stores that were not turning profits.¹



Online Sales

Coronavirus wasn't all bad for JL&P, however²: their online store is now thriving. In previous years, the online shopfront accounted for about 40% of the department store's revenue, but in 2020, this accounted for 60-70% of sales. During the pandemic, 25% more orders were being delivered straight to homes rather than for click-and-collect – further reducing the need for physical stores. While not part of the department store business, online Waitrose grocery orders 'quadrupled' when compared to the start of 2020.

Above: The former Birmingham *Grand Central* John Lewis store; one of eight closed in an effort to improve the Partnership's finances.

By Daniel Adesina on Unsplash

A significant downside to shopping online is being unable to try on and view products before buying them. This leads to more products being returned, creating more logistical hassle. Additionally, those without access to an internet connection or access to technology are unable to shop. A benefit, however, is shoppers being able to browse at their leisure: whenever and wherever they choose. Previously, John Lewis' online orders were most commonly placed between 7-10pm, however during the coronavirus pandemic where the general public were encouraged to stay inside, this changed to be more spread out throughout the day; though early evenings are still the most popular times to browse the website.

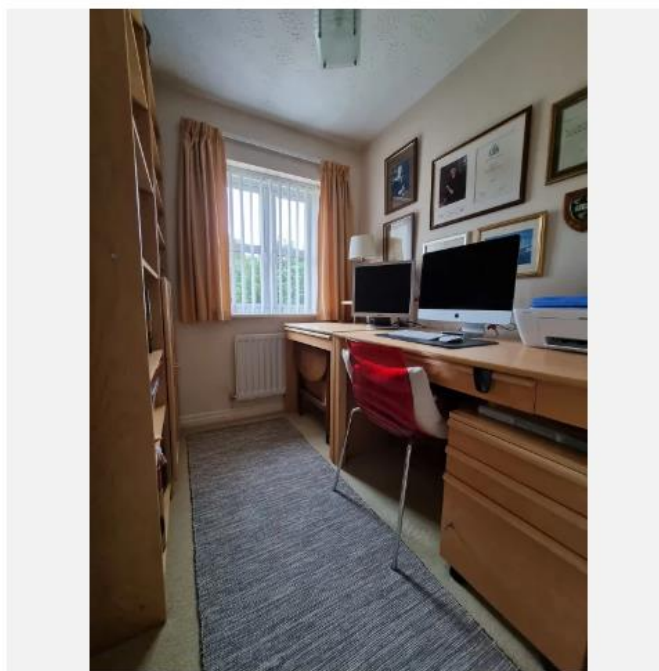
¹ [John Lewis Partnership - UNAUDITED RESULTS FOR YEAR ENDED 30 JANUARY 2021](#)

² [John Lewis Partnership - 2020: The Year that Changed Everything](#)

Company Reviews

Customer Reviews for Products

The John Lewis website allows customers to write reviews for products they have bought. This opens up the risk to spam and false reviews, however the site combats this by requiring users to have created an account and to have actually purchased the product before leaving a review. Additionally, users can upload photos of the product to allow other customers to see, for example, how a rug looks in a certain room. These reviews being easily available are another benefit to an e-commerce website. They allow would-be customers to make an informed decision about the products they wish to procure.



Good value runner

★★★★★

A really good value runner to update a room. Well made and a nice soft texture underfoot. More of a brown/violet mix of colour, was expecting more grey, but works well in my office.

Have same style of rug (but large) in my conservatory in the fjord colour , again great value and very comfortable underfoot on a hard floor.

docgt

19 August 2021

Is this review useful?

[Yes \(1\)](#) [No \(1\)](#) [Report](#)

Above: An example of a review with a photograph posted for a rug available on the John Lewis website.

Third Party Reviews

Reviews of John Lewis as a company on third-party websites are generally positive in nature. The John Lewis brand was rated #1 in the UK for the fourth year in a row by YouGov³ and Waitrose was awarded supermarket of the year by Which?⁴

On third party websites, such as Trustpilot, there is less moderation and lower quality reviews are able to slip through the cracks. As an example, a user on Trustpilot rated the website one star out of five, despite

³ [YouGov Best Brand Rankings 2020 in the United Kingdom | YouGov](#)

⁴ [Which? reveals best supermarket of 2020 – Which? News](#)

describing the delivery as 'on time with [sic] good packaging.' While many of the negative reviews seem legitimate – many complaining about delivery and logistical hurdles, two downsides to e-commerce – false or incorrect reviews such as these may bring down the overall score unfairly.



Above: The John Lewis & Partners page on aggregate review site TrustPilot.

Products

A significant benefit to John Lewis running both a 'brick' and a 'click' operation is that their customers are able to benefit from the best of both.

An e-commerce website allows John Lewis to stock more products, since they do not need to be on display and can instead be kept in situ in distribution centres and warehouses. The downside to this, of course, is that customers are unable to physically view or try on the products they are buying and are instead reliant on the product photography, description and reviews. In a brick-and-mortar store, less products are able to be stocked, but it is easy for one to browse and inspect items for sale.

Site Structure

The website is structured similar to the physical stores; it is split into several distinct sections, such as Men, Women, Electricals, Beauty and etcetera. Each page employs a consistent, classy design language that fits the image the brand is trying to portray.

The footer (bottom section) of each page contains additional navigation that is not present in the header (top section). This is where links to other John Lewis services as well as links to less popular pages are located.

Help	Shopping	More from us	Finance
Customer services	Wish List	John Lewis Broadband	Interest free credit
Contact us	Buying guides	Waitrose & Partners	Partnership card
Never Knowingly Undersold	My John Lewis	John Lewis Opticians	Home insurance
Our shops	Inspiration	John Lewis & Partners Business	Pet insurance
Our services	Gift Cards & vouchers	John Lewis Home Solutions	Car insurance
Product recalls & safety notices	Shop by brand	JLP Jobs	Wedding insurance
Staying safe during Covid-19	Terms & conditions	JLP corporate information	Foreign currency
	Secure shopping	Community matters	Investments
Delivery	Our privacy notice	Sustainability	Feedback
Track your order	Cookies	Our events	Your comments help us improve our website
Delivery & collection	Our apps	Our Modern Slavery Statement	<div>Leave feedback</div>
Returns & refunds	Offers		
<div><div>f</div><div>🐦</div><div>📺</div><div>p</div><div>@</div></div>			
© John Lewis plc 2001 - 2021			

Above: The common footer that appears on all pages on the John Lewis website.

Payment Methods

Users do not need to create an account to purchase items from the John Lewis website. Payment for items can be made using VISA, MasterCard and American Express cards, as well as Partnership Credit cards, Apple Pay and PayPal. Debit and Credit cards are able to make use of Verified by VISA, Mastercard SecureCode and American Express SafeKey technologies to detect potential fraud by requiring users to authorise their payment using a one-time PIN or in the bank's respective app⁵.

In physical stores, customers have the additional option of paying with cash, which is not available if purchasing online.

Security

Every page on the John Lewis website is encrypted with an SSL certificate. This means that information sent and received from the website cannot be intercepted or changed by a man-in-the-middle attack without the clients' browser displaying a warning.

As with any website, the John Lewis storefront could potentially be susceptible a DDOS attack. To mitigate this, John Lewis have potentially⁶ employed cloud provider Akamai to act as a proxy and firewall, blocking spam requests and detecting unhuman-like visit patterns. The main catalogue pages of the John Lewis website are hosted externally on

⁵ <https://www.johnlewis.com/customer-services/prices-and-payment/payment-options>

⁶ Based on the HTTP response headers of the website

servers in the cloud⁷, meaning provisioning additional resources during busy periods is an easier task – no need to physically install new servers in company-owned datacentres.

Promotion

While John Lewis may be the most convenient option for someone locally in their town, they are competing against far more companies in the online landscape. It is very important they promote their online business effectively in order to stand out.

Social Media Presence

John Lewis has a strong presence on the most popular social media platforms. On Twitter, they promote offers and suggest products, as well as post cat photos (who doesn't want to see those?). On Instagram, they showcase home décor and fashion using items available for purchase in-store or online. These postings are all designed to drive more users to online storefront to browse and subsequently purchase products.

Meta Tags

Each page makes use of meta tags to improve SEO (search engine optimisation). These ensure that when a user types certain keywords into a search engine – such as 'runner rug' – the John Lewis product pages appear close to the top.

```
<meta name="description" content="Buy Fjord ANYDAY John Lewis & Partners Textu
```

Above: The meta description tag in the source code of the product page of a rug.

⁷ [How to do digital transformation like John Lewis & Partners. | Equal Experts](#)

Loyalty Schemes

John Lewis run two loyalty schemes in an effort to retain customers. Users of a 'My John Lewis Card'⁸ will receive periodic rewards if they scan their card each time they shop, either online or in person. The second loyalty scheme John Lewis operate is the Partnership Card⁹, which is a credit card which earns points when one makes a purchase with it. These points can then be redeemed for vouchers that can then be spent in-store or online at either John Lewis or Waitrose.

Both of these loyalty schemes reward frequent customers and encourage them to come back.

The use of a user account (loyalty or otherwise) allows the company to track what products you are most interested in and are more likely to purchase, improving recommendations and making advertising more targeted. This would not be possible in a physical store.



“Never Knowingly Undersold”

John Lewis operates a price matching scheme, where they will match a lower price of a product, providing it is available in a high street retailer. This is another method of strengthening customer loyalty as well as obtaining new customers.

Conclusion

One can draw a lot about excellent e-commerce strategies and ideas from John Lewis & Partners. Their position as Britain's #1 brand demonstrates that they are doing a lot of things right; The easy-to-navigate website along with their various loyalty and promotional schemes all combine to make a successful e-commerce website.

⁸ <https://www.johnlewis.com/our-services/my-john-lewis>

⁹ <https://www.johnlewisfinance.com/partnership-card.html>

Unit 8, Assignment 1 – Task One Booklet

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P2 - Impact of Introducing IT

There will be several benefits to setting up an E-Commerce platform for the Hockley Watch Emporium.

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Unit 8, Assignment 1 – Task Two Discussion Notes

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P3/M2 - Risks to the Organisation + How they can be Overcome

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