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iGAMES DATA MANAGEMENT

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TYPES OF WEBSITES

Overview

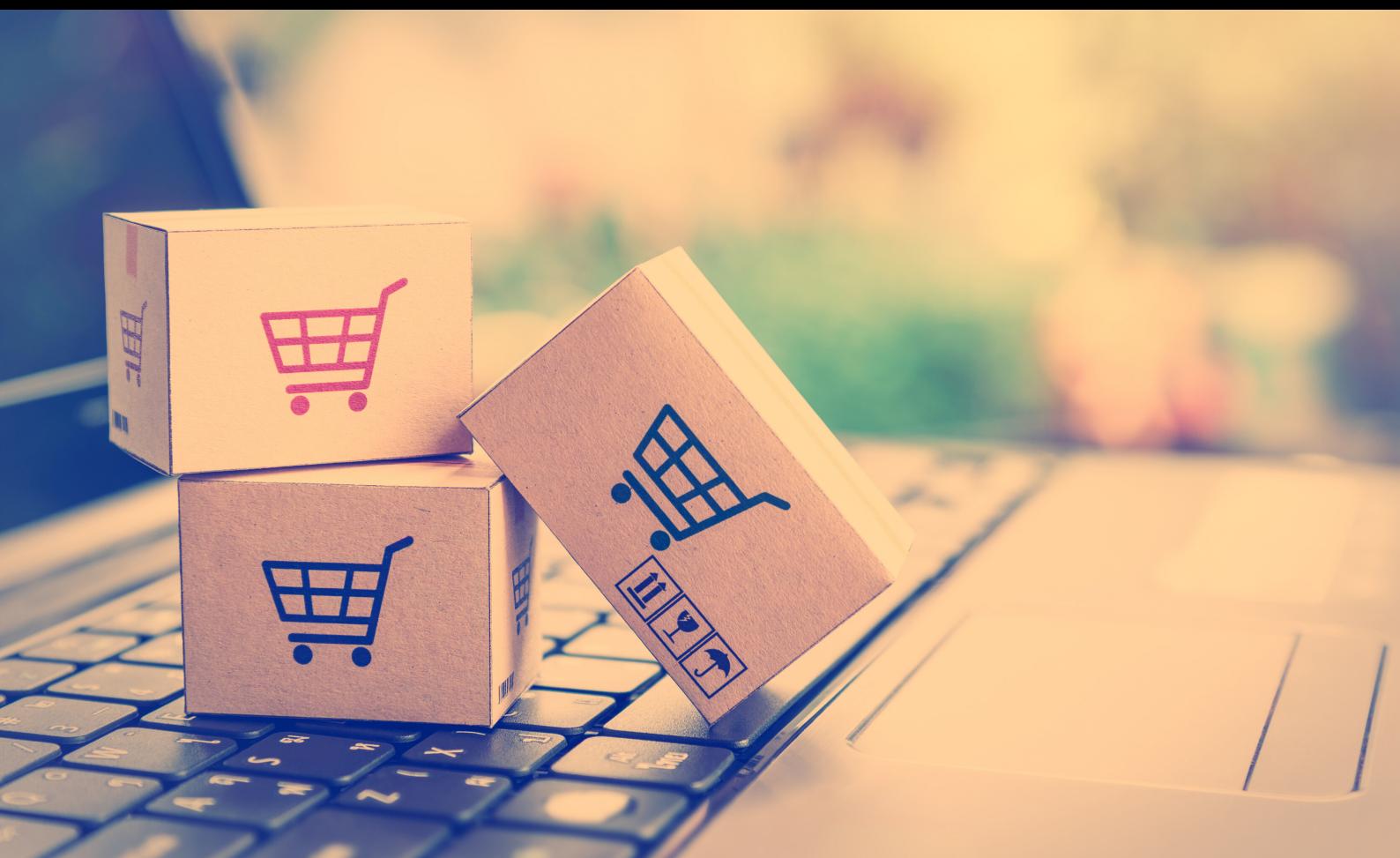
Retail (Myer Online, Target Online, etc)

Freelancing (Fiverr, Freelancer.com, etc)

E-Commerce (Amazon, Ebay, etc)

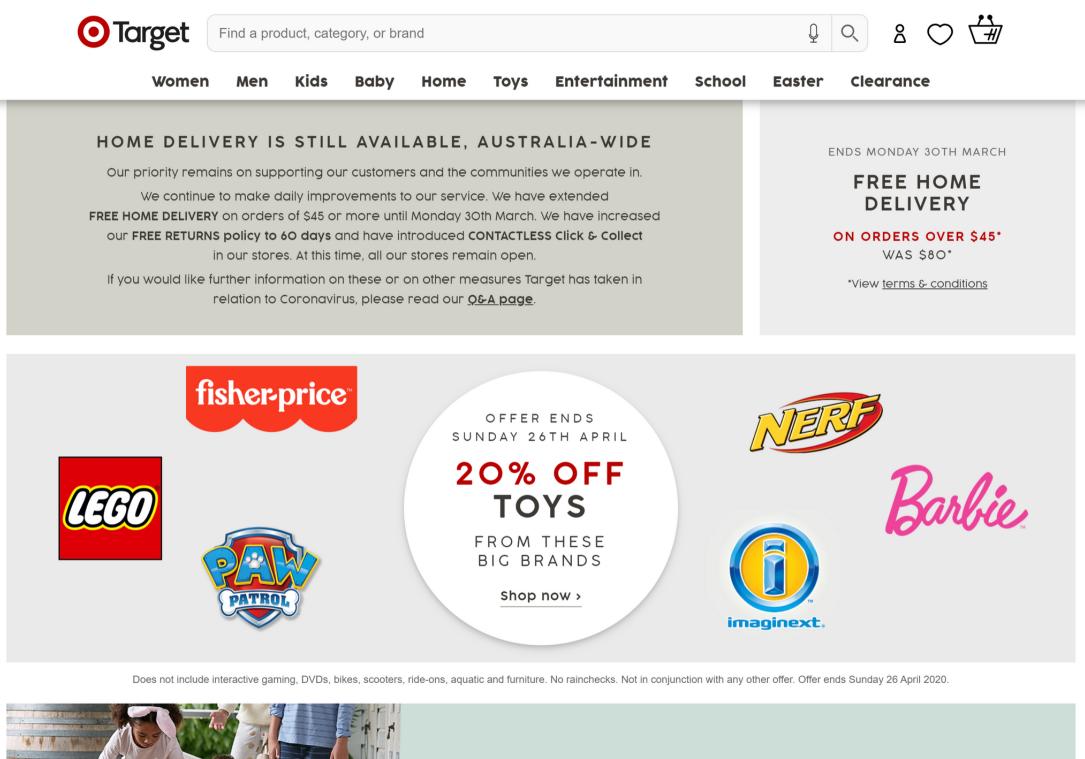
Cloud Computing (Google One, Microsoft Azure, Amazon AWS, Hostgator, GoDaddy, Github & Gitlab Enterprise, etc)

Media Sharing (Youtube Red, Various Adult Websites, Vimeo (P.S. nobody uses Vimeo))



Retail Websites

Almost every big franchise, like Myer, Target & Woolworths have large websites with the capability to buy & order products online, and have done for some time. The websites exist for two main reasons: to sell their products, and to grow their business; this can be done through data mining (Andrew Pole is a name that is regularly thrown up due to his controversial tenure at Target, which started in 2002) and email subscriptions.



Best Practices

Each retail site follows a similar pattern. They have a clean and minimalistic header menu, which functions as a “mega menu” for easy and vast navigation of the entire website. To buy items from a retail store, you need to be signed in with an account, the details of your account that a company like Target would require are noted down below in the section “Data Dictionaries”. The most profitable items or categories are often displayed underneath the main menu on a retail site in a large “call to action” section, or this CTA is taken up by the current ongoing sales that the store is providing, making it one of the first things your eyes are drawn to when you open the website.

Data Dictionary - Target

Retail (Target Online)

<u>Column</u>	<u>Data type</u>	<u>Description</u>	<u>Constraint</u>
j_username	email	Customer's email	Required
firstName	text	Customer's first name	Required
lastName	text	Customer's last name	Required
optionalMobileNumber	tel	Customer's mobile phone number	Optional
countryCode	text	Country code for customer's address destination	Required
search	text	Nearest target store lookup	Required if store pickup
line1	text	Customer's address line 1 (i.e. street address)	Required
line2	text	Customer's address line 2 (i.e. apartment/suite)	Optional
paymentMethod	text	Chosen method of payment	Required

Data Dictionary - Amazon Ecommerce

E-Commerce (Amazon)

<u>Column</u>	<u>Data Type</u>	<u>Description</u>	<u>Constraint</u>
userFirstName	string	First name of the user	Required
userLastName	string	Last name of the user	Required
userDOB	string	Date of birth of the user	Required
userCard	integer	User credit card information	Required for purchasing/selling items
userAddress	string	User physical address	Required when purchasing items
userEmailAddress	string	User email address	Required
userPassword	string	Custom-chosen password for the user to verify identity when logging in	<input checked="" type="checkbox"/> Required

Data Dictionary - Google Cloud Computing

Cloud Computing (Google Drive)

<u>Column</u>	<u>Data Type</u>	<u>Description</u>	<u>Constraint</u>
userGoogleAccount	string	The email address that is linked to the customer's Google Account	Required
userPassword	string	*Connected to "userGoogleAccount"	Required
userBilling	Boolean	If the user/customer wants to have more storage (google drive) or <u>Gsuite</u> (emails), then the boolean is set to 1, true, or yes	Optional (if user wants premium plan)
userCard	integer	Credit card information	Optional (see above row - "userBilling")
numberOfEmployees	integer	Number of employees, including you (customer/user)	Required - to determine amount to be billed to the user
userDomain	boolean	You'll need a domain, such as <i>example.com</i> , to set up email and a G Suite account for your business Options are: yes (I have a domain), no (I don't have a domain)	Required - can't set up emails, google account without a domain

Managing Data Glossary

Managing Data Terms - Glossary

Term	Definition
Entity	An entity is an object that exists. It can be a single thing, person, place, or object
Attribute	A characteristic of an entity. It refers to a database component, such as a table or entity, and they describe the instances in the row of a table.
Database	An organised collection of data
Data redundancy	When the same piece of data is stored in two or more separate places
Data integrity	The consistency of data in a database's life cycle
Data mining	The process of processing large sets of data to find patterns
Data mart	A segment of a data warehouse that is designed to be used for a specific line of business
Data warehouse	A collection of data marts



"HTTPS IS USED FOR SECURE COMMUNICATION OVER A COMPUTER NETWORK, AND IS WIDELY USED ON THE INTERNET. IN HTTPS, THE COMMUNICATION PROTOCOL IS ENCRYPTED USING TRANSPORT LAYER SECURITY OR, FORMERLY, ITS PREDECESSOR, SECURE SOCKETS LAYER."

Almost every website today that takes some sort of important & private information regarding a customer, consumer or subscriber has what is known as "SSL encryption", which is shown in the address bar of a web browser with the prefix "https". HTTPS stands for Hypertext Transfer Protocol Secure.

While websites and applications that rely on HTTPS encryption are by no means unhackable (look at the iCloud NudeGate scandal or the Heartbleed bug), they are much more secure than regular HTTP. There is a small cost when purchasing the domain name and hosting for the website that comes with SSL, but it keeps the information of its customers private and secure. For start-up businesses or smaller companies (like iGame), it is simply not worth attempting to bypass the encryption on a website, as the payoff (customer data) will be smaller - as there are less customers - than if they focused on attacking a company like Myer, JB Hi-Fi or Facebook.



DISASTER RECOVERY PLAN

A disaster recovery plan helps individuals or organisations prepare, prevent, and handle a disaster - for example, a natural disaster like bushfires - if and when it occurs.

Cloud Backup

A cloud backup is a service that provides individual users as well as organisations and businesses with a system for the backup, storage, and recovery of computer files, like the database and files included on the iGames website.

Pros	Cons
Backup and restore can be initiated practically anytime, anywhere	Hosts may have a limit to how much data can be saved due to availability and cost
Only pay for what is needed, and storage plans are flexible i.e. upgrades can be made on-demand	Full recoveries may take a long time and put stress on local system



Security problems regarding data breaches

Security risks involving data breach

- Virus/malware
 - E.g. trojan horse
 - A malicious application disguised as a legitimate one and may have similar interface & functionality. If careless and not downloading the app from its official website then “microsoftaccess.exe” will steal whatever data is being stored, risking data leak
- Physical damage
 - E.g. water leakage
 - A water leakage will mess up the circuitry in the hardware
- Data corruption
 - Corruption of data
 - The data that was initially not corrupted is now corrupted, which means it is unuseable
- Unauthorised access
 - E.g. SQL injection attack
 - A type of code injection technique through a website’s SQL input statements
 - Can be prevented by sanitising inputs

Ethical Issues regarding data collection

With the collection of data comes risks, both financial and social risks, to the users that have their data collected by companies like iGame. As mentioned previously, it is therefore the moral - and legal - responsibility of iGame to ensure that the data collected (like emails, home addresses and date of birth) is protected behind multiple secure systems and is encrypted, processed and stored securely.

The physical safety of the customer should be the primary concern of iGame when regarding customer data. When data is stolen, users' finances are not the only thing that's vulnerable. When Dorian Nakamoto, a Japanese-American engineer, was claimed by Newsweek to be the founder of the popular cryptocurrency Bitcoin, his home address and photos of him were released, and this action drew widespread condemnation from millions around the world. While it is debateable the legality of Newsweek's actions (Dorian had no doubt shared information freely on the internet, and if it's shared publicly there's no law against resharing it), it was evidently a hot topic when considering the ethics behind the decision to share his personal information. The PR disaster for Newsweek is something that iGame will want to avoid, and it doesn't matter if iGame releases its user's data freely, or if it's hacked - if it's not stored securely, the iGame brand will suffer.