

Application Skills

Online software tools

Definition:

- Software you can use directly connected to the internet and working from the internet

Examples:

- Online photo/video editors
- Social media
- Online mail
- Online word processors

Advantages:

- Work from home
- Can use free software
- Collaboration

Disadvantages:

- Reliance on technology
- Less features
- Privacy issues

Video application features

- Multi-layer track editing
- Titles
- Transitions
- Effects

Sound application features, including sound effects

Similar to video editing

- Multiple layers
- Effects

- Editing features
- Export options (WAV, MP3, etc)

Publishing features

Colour schemes	<ul style="list-style-type: none"> • CMYK for print and RGB for screen
Layers	<ul style="list-style-type: none"> • the term used to describe the different levels at which you can place an object or image file. In the program, you can stack, merge or define layers when creating a digital image.
Frames	<ul style="list-style-type: none"> • e.g., animation
Typography	<ul style="list-style-type: none"> • leading and kerning • fonts
Templates	<ul style="list-style-type: none"> • more cost efficient • solution developed quicker • ensures consistency and higher quality
Print/display option	<ul style="list-style-type: none"> • formats for web .png, .jpg, .svg (e.g., number of results shown and order shown), • formats for printing .pdf universal, smaller file size, locks fonts, image placement, content ie no problems with layout

Types of digital publications

Generation 1 —> electronic versions of traditional media

- CD-ROM/DVD-ROM
- eBook
- ePub (electronic publication)
- PDF
- Online newspaper
- Online magazine

Generation 2 —> software

- Blogs
- Mobile apps
- Podcasts
- Enhanced publication

Advantages and disadvantages of different types of digital publications

PDF

Advantages	Disadvantages
Can be opened by most computers	Can sometimes not display correctly on small screens (e.g. mobile)
Gives you control over layout and fonts	Not free to edit. Need special software
Can be made by lots of different types of software (e.g. Powerpoint, Pages etc)	Difficult to edit
Easy to attach to email and upload	
Reader software (Adobe Reader) is free	

ePub

Advantages	Disadvantages
Delivered as one zip file	Difficult to make an ePub document
Easy to unpack on smaller devices	Creating the zip archive is also difficult
User friendly and can be opened on many devices	

Not owned by large market	
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Project management is the process and activity of planning, organising, motivating and controlling resources, procedures and protocols to achieve specific goals in scientific or daily problems.

Gantt Chart

A Gantt chart is one of the most popular and useful ways of showing **what** has to be done and **when**.

Project management approaches

1) **Structured Approach**

The Structured Approach maintains that the project should only move forward to the next phase only when its preceding phase is reviewed or verified.

Common steps for structured approach

- 1) Requirements
- 2) Design
- 3) Implementation
- 4) Verification
- 5) Maintenance

Advantages

- Less time and energy wasted
 - Making sure each phase is 100% complete before moving onto next one - saves energy of having to redo phases
- Recovery
 - Easy for project to recover from loss
- Simplicity
 - Structured approach, very methodical

Disadvantages

- New parameters
 - If clients change requirements, design must be modified to accommodate new requirements
- Implementation
 - Designers might be unaware of difficulties when writing design for a product
- Time
 - Uses more time

2) Prototype Approach

The Prototyping Approach is the activity of creating incomplete versions of the software program.

The purpose of this approach is to allow users to evaluate developers proposals by trying them out, rather than having to interpret the design based on descriptions.

The prototype may be completely different from the final product.

Advantages

- Reduced time and costs
 - Determining what the user wants early can result in faster software
- Increased user involvement
 - Requires client to interact with prototype allowing them to provide better feedback

Disadvantages

- Insufficient analysis
 - Unable to properly analyse the complete project
- User confusion of prototype and finished system
 - Users can think that a prototype is actually the final system
- Excessive development time of prototype
 - Although prototyping is meant to be done quickly, they can develop prototypes that are too complex, which can delay the final product

Project planning tools

- Storyboards —> a graphic representation of how a video will unfold, how it is shot which makes production easier and saves time
- Site maps —> a model of a website's content designed to help both users and search engines navigate the site, can be a hierarchal list of pages
- Flow charts —> a diagram of the sequence of movements or actions of people or things involved in a complex system of activity
- Gantt chart —> one of the most popular and useful ways of showing **what** has to be done and **when**.
 - Allows you to see:**
 - What various tasks are
 - Beginning and end
 - Time frame
 - Overlapping of tasks
- Project management software —> e.g. Wrike, Taiga

Appearance considerations for a digital product and/or digital solution

- **Structure**

Logical or hierarchal

- **Usability**

COUP'N'S

- **Accessibility**

Operable for people with disabilities or impairment — Toilet Paper Can Send Narwhals Crying

- **User experience (UX)**

The overall experience of a person using a product — the way the UI feels

- **User interface (UI)**

The way in which a user interacts with the system

Relationship between UI and UX

- UI helps the user accomplish a given task as efficiently as possible through balancing aesthetics and functionality which creates a positive UX

Impacts of Technology

The concept of Intellectual Property (IP) & Intention and purpose of IP in Australia in relation to copyright and/or design of digital products

Intellectual Property:

- Protects property rights in creative and inventive endeavours
- Gives creators and inventors certain exclusive economic rights to deal with their creative work

Why?

- Encourages further intellectual creativity and innovation

Intellectual property rights are tangible:

- Protects rights rather than physical property —> cannot be seen or touched

Forms of intellectual property:

- Copyright
- Patents
- Trademarks

Works protected by copyright:

- Books
- Movies
- Music
- Podcasts
- Games
- Artwork

Copyright Act 1968:

The moment an idea or concept is documented on paper or electronically it is automatically protected by Copyright Law

The concept of online defamation in Australia

Online defamation:

- Where a person intentionally states or spreads false information about another person to cause others to think less of that person over the internet
- A defamatory statement can be anything that:
 - Makes someone the butt of jokes
 - Damages their reputation
 - Causes others to avoid them

Forms of defamation:

- Novels
- Books
- Cartoons
- Poems
- Posts

Legal action available in Australia to counteract online defamation

Since online defamation is illegal, civil fines can apply.

What is required to take action against online defamation:

1) **Publication**

When a person understands the words that are published
e.g. newspaper, broadcast on TV, email

2) **Identification**

Publication must be of and concerning the plaintiff

3) **Defamatory meaning**

1. Identify what is meant by the publication
2. Whether the imputations arising from the publication are defamatory

Possible defences:

1) **Truth or justification**

If imputations are true, defendant has complete defence

2) **Fair comment or honest opinion**

Opinion based on proper material and is honest

3) **Absolute privilege**

A person can say whatever they like and have a complete defence to defamatory claim

4) **Qualified privilege**

Includes reply to attack, government discussion, political matter

5) **Innocence dissemination**

Denial

What is required to take action against online defamation

- Write defendant a letter asking to remove the content, and if after 30 days they do not take action, another letter can be sent, and if the 2nd letter isn't responded to then you can take legal action
- Contact website administrator and request information be removed
- Contact police

The concept of freedom of information (FOI) in Australia

Provides a legally enforceable right of access to government documents

- Allows individuals to see what information the government holds about them, and to seek correction of that information if they consider it wrong or misleading

Who is covered by FOI:

- Australian Government Ministers
- Most, but not all of the Australian Government

Key provisions of FOI in Australia in relation to digital products

- Can request information that the government holds about people
- Promotes government accountability and transparency

Advantages, disadvantages and implications of virtual and physical collaboration

Virtual Collaboration:

Collaboration, constructed without face-to-face interaction, enabled by technology.

Advantages:

- Not limited to geographical location
- Can contact experts worldwide to help with development of project
- Good for the environment

Disadvantages:

- Dependent on technology
- Delay/lag time
- Open to hacking/privacy breach

Physical Collaboration:

To work jointly with others in the same location to create a product.

Advantages:

- Instantaneous
- No infrastructure needed
- More tactile

Disadvantages:

- Limited to geographical location

Implications:**Impact of convergence trends in contemporary digital technologies**

Definition: Technological Convergence is the process by which existing technologies merge into new forms that bring together different types of media and applications.

Through technology convergence, devices can interact with a wider array of media types.

Impacts:

- Fewer devices (all in one)
- New businesses providing these technologies

- Phone companies need to constantly update designs due to competition

<p>Developments</p>	<ul style="list-style-type: none"> • Media → Technology Convergence resulted in devices interacting with formats other than those designed • Telecommunications → Handheld devices being able to provide different functions • Hardware → specifically designed to replace a number of different items (e.g. mobile devices, music players, digital cameras)
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<p>Advantages</p> <ul style="list-style-type: none"> • Offers many devices in one, saving cost and size • Convenient → multiple devices in small space which leads to more functionality than before 	<p>Disadvantages</p> <ul style="list-style-type: none"> • Tradeoff → not the best quality for individual functions (e.g. Pro Commercial Photographers use higher end cameras)
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Examples of Tech Convergence

<p>Smart Phone</p>	<ul style="list-style-type: none"> • Combines features of a cell phone with other devices → GPS, media, music, camera • Advantages - Convenient - multiple devices in your pocket • Disadvantages - Tradeoff - not the best quality for individual functions. (e.g. iPhone camera isn't as good as a Canon camera)
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Smart TV	<ul style="list-style-type: none"> • TV with integrated internet and Web 2.0 features • Example of convergence between computers and TV sets • Advantages - Can access internet + apps (less need for computers) • Disadvantages - Expensive compared to normal TV, security risk (through connection to internet)
Smart Poster	<ul style="list-style-type: none"> • Can tap to receive interactive content, download vouchers and engage in social media • Advantages - Interactive advertising experience • Disadvantages - Increase use of electricity, potential to be annoying

Benchmarking -

To evaluate the performance of a product by comparison with a standard

Common hardware	<ul style="list-style-type: none"> • Measures performance of computer hardware <ul style="list-style-type: none"> - CPU - GPU (Graphics Card) - RAM (Read Write Speed) - HDD (Read Write Speed) • Provides baseline when comparing performance of different computer hardware's suitability to perform basic tasks (e.g. gaming, multimedia)
Purpose of benchmarking	<ul style="list-style-type: none"> • Users can't always trust vendors • Allows software vendors to better match software to hardware

Advantages	<ul style="list-style-type: none"> • Users → better informed about what their hardware can do • Software vendors → better informed and can recommend specifications for customers
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Hardware

Specifications of digital devices and their impact upon usability

Devices -

Desktop and computer screen

- Contains screen, keyboards and a pointing device (e.g. mouse or trackpad)

Screen	<ul style="list-style-type: none"> • Desktop machines generally don't have touchscreen, as reaching towards monitor may cause arm strain • Mouse or trackpad used instead
Pointing device	<ul style="list-style-type: none"> • Desktops and laptops have functions unparalleled by touchscreen (hover, control, alt, click, command) • A text cursor is seen on screen

Tablet device/mobile device

- Touchscreens
 - Forms factor that is comfortable for sitting and consuming content
- Entering info is not as convenient as desktop

Touchscreen	<ul style="list-style-type: none"> • Pleasant and fun to use — interaction with on-screen elements
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Characteristics of development trends in emerging mobile devices

- Tablets and mobile devices are selling at near desktop levels now
- Improved processing
 - LD-DDR4 memory will make movie devices faster by 50%, more powerful by 40%

5 emerging hardware trends and the software to drive them

NFC (Near Field Communication)	<ul style="list-style-type: none">• Standardisation of paying for goods with phones (e.g. Apple Pay)• NFC for social interaction (e.g. auto-tagging on Facebook)
3D Cameras	<ul style="list-style-type: none">• Provides device with input sensor for spatial relations
Low Power GPS	<ul style="list-style-type: none">• Most accurate positioning sensor, runs through battery life
Higher Resolution Screens	<ul style="list-style-type: none">• Companies such as Autodesk & GE develop software enabling professionals to easily carry out soft copies of engineering and medical documents
Greater processing power and capacity	<ul style="list-style-type: none">• Mobile devices approaching desktop in terms of computer power and capacity (e.g. Photoshop for iPad)

Suitability of emerging mobile devices to meet client (user) needs

Evaluate computer system specifications for usability

Client Needs (LOCRIP)

Location Services	<ul style="list-style-type: none">• Locate nearby services (e.g. finding ATM)
Online Mobile Payments	<ul style="list-style-type: none">• Mobile devices able to make online payments, replacing cards
Convenience of Wireless	<ul style="list-style-type: none">• Critical for modern users, wireless available in most cities, reliable connectivity
Remote Control of Household Goods	<ul style="list-style-type: none">• Change channels on TV• Air conditioning
Interactivity	<ul style="list-style-type: none">• People can actively engage with apps (e.g. emails)
Personalised	<ul style="list-style-type: none">• Settings designed to meet exact needs of user (e.g. needs for a doctor who does house calls off a mobile device)

Compare various mobile devices with other computer systems

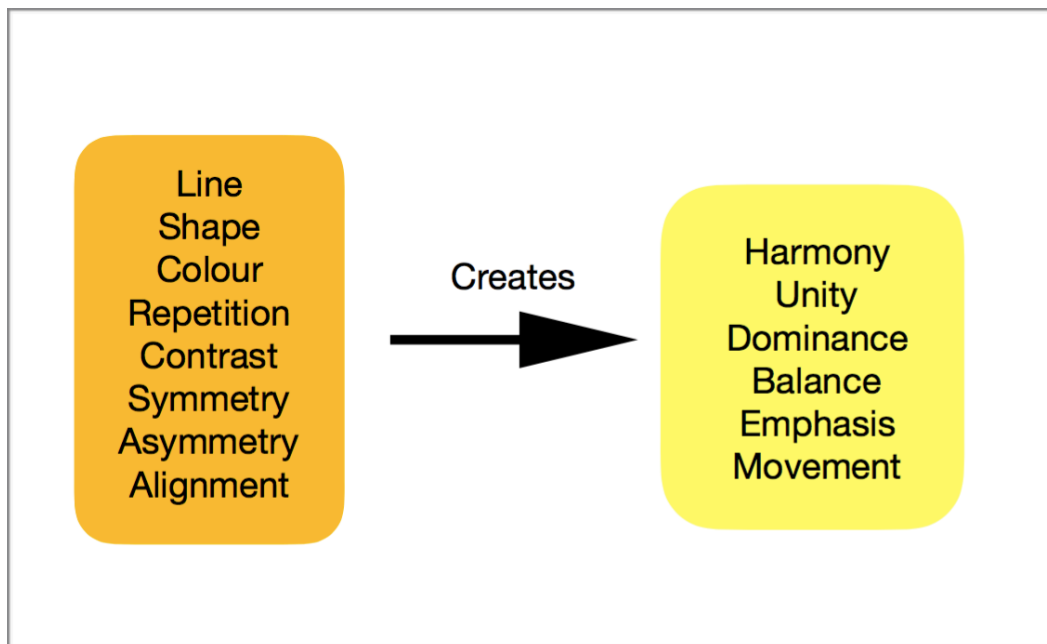
iPhone	Surface Pro
Touchscreen	Touchscreen
Handheld	Handheld or on desk
Pocket sized	Tablet sized
Less RAM	More RAM

Relationship(s) between the elements of design and the principles of design

The elements of design are the tools used to create the principles of design. One cannot exist without the other and they are combined to create visual appeal.

Design Elements - The basic building blocks used in visual design

Design Principles - Guidelines to follow when designing graphics and layouts



Elements

- Line
- Shape
- Space
- Texture
- Colour
- 3D Form
- Tone

Principles of Design

- Balance
 - Symmetry
- Emphasis (Contrast and Proportion)

- Juxtaposition of opposing elements to attract a viewers attention
- Dominance
- Unity
- Pattern (Proximity and Repetition)
- Movement

Compositional Tools

- Rule of thirds
- Grid and alignment
- Reading of Gravity
- Form and Content

Design Concepts

Harmony

- Line
- Shape
- Colour
- Repetition
- Symmetry tone space

Unity

- Colour
- Shapes
- Line
- Texture
- Alignment

Dominance

- Contrast
- Shape
- Proportion
- Colour

Balance

- Colour
- Asymmetry
- Symmetry

Features of a User Interface

Logical and hierarchal organisation of content

- Logical → grouped by relevant categories (e.g. dropdown menu's)
- Hierarchal → in order of importance from **top to bottom**

Graphical User Interface (GUI) suitable for target audience

- Match the interface to the users (target audience)
 - If the target audience is 5 years old, lots of pictures, not much text, bright colours

Relevant help features of a graphical user interface (Usability, Accessibility and Inclusivity)

Usability → products should be effective, efficient and satisfying in completing the users goals (**COUP'N'S**)

- Clear design structure
- Organised content (hierarchal or logical)
- User feedback
- Pages/sections/parts show consistency
- Navigation → clear and simple
- Search features

Accessibility → operable for people with disabilities (**Toilet Paper Can Send Narwhals Crying**)

- Text alternatives for any non-text content
- Provide users enough time to read and use content
- Create content that can be presented in different ways
- Seizures → avoid content that is known to cause them

- Navigation —> provide aid to find content and determine where they are (e.g. sitemaps)

Inclusivity —> usable by everyone to greatest extent possible without need for adaptation

- Currency converter
- Colour —> limited use of red and green for colour blind users
- Language translator
- Audio narration
- Text enlarger