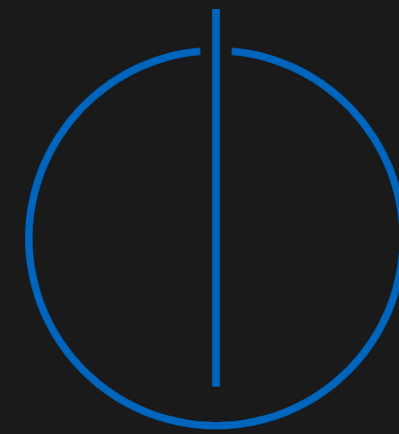Master's Thesis

Department of Informatics

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A Practical Approach to Documents in Game Development

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Motivation

- documentation requires a lot of extra time and effort from the developers
- often more of a necessity than something people actually enjoy doing
- there is no magic template[2]
  - too restrictive
- is there a better way?

Motivation (cont.)

- **Conceptual frameworks**

  - loose bounds grant more flexibility

  - offer customisable guidelines

  - allow more granular control[4]

  - guide developers throughout the whole production process

    - no longer "just" a necessity, but a powerful tool

Related Work

- **core idea** →

  - "Game Design Methods and Tools: Documents in Game Development", lecture by D. Dyrda[5]

  - "Pillars, Goals, Features & Elements", article by M. Eff[7]

  - "The Art of Game Design", book by J. Schell[2]

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The Ludodome

- **etymology**

  – specifically created for the purpose of this thesis

  – from the Latin words ***ludus*** ("game")

    ▷ game development

  – and ***domus*** ("house, home")

    ▷ mnemonic to help remember the general structure of the framework

The Ludodome (cont.)

- what is it exactly?

  – in short, a framework

  – fuses different terminologies from game development together

    ▷ **design concepts**, **pillars**, **features** and **goals**

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Concept

- "The game begins with an idea." (J. Schell[2], Chapter 6)

- compact enough to give creativity room to expand

  – 1-2 phrases should be enough

- complex enough to immerse the reader in the vision of the designer

  – should provide hints about:

    ▷ *aesthetics*

    ▷ *space-time setting*

    ▷ *general atmosphere*

Concept (cont.)

- should resonate with both players and developers

- focal point of all design decisions

  - design team should use every means possible to reinforce the concept[2]

- lays the foundation for the overarching pillars to be derived

Example

"The fantasy of being a pirate."[2]

- the term "pirate" alone brings a lot of sensory cues with it

  – exploration of exotic islands (visual)

  – sea shanties and the sound of waves hitting the shores (acoustic)

  – the smell of sea salt and sweat (olfactory)

  – the wind blowing in your face while trying to balance on the swaying ship (tactile)

  – the taste of rum (gustatory)

Example (cont.)

"The fantasy of being a pirate."[2]

- "fantasy" does not directly imply the genre here

  – fantasy vs. realistic setting

- temporal setting: most likely 1650 - 1730 (The Golden Age of Piracy[14])

- dynamic gameplay

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Pillars

- set of core elements that define the game and give it structure

- a more detailed extension of the concept

- make sure the game delivers the intended player experience[2]

- help share the designer's vision with the rest of the team

- multiple iterations before the production phase to ensure robustness[5]

- to be consulted during production whenever there is a decision anyone on the team needs to make[15]

Pillars (cont.)

- **goals**:

  - bind all elements of the game together into a cohesive and robust unit

  - ensure all elements live in harmony with each other

  - provide support and stability for the features

- very important **rule**:

> No decision during pre-production, production or post-production should ever be against a pillar. All decisions should be in line with the vision of the pillars.[5]

Pillars Types

● **3 base types**

   – textual pillars

   – visual pillars

   – acoustic pillars

● **2 special types**

   – custom pillars

   – unique pillars

Textual Pillars

- straightforward and no longer than a paragraph

  – the more specific a pillar is, the harder it will be to find features to properly reinforce it

- require no special tools

- should be written in prose and technical terms should be avoided[5]

  – goal is to create emotional connection with the reader[6]

Textual Pillars – Example

REDEFINING MUSICAL STYLE FOR THE WITCHER 3

▶ The Witcher universe is heavily grounded in **slavic folklore**

▶ Dark fantasy setting

▶ Game's main feature – **gritty, mature, engaging story**

▶ Both **intimate and epic in storytelling**

▶ Nothing is good or bad, everything is in the gray zone

▶ **choices & consequences**

▶ **nonlinearity**

Fig. 1.
Slide extracted from a GDC 2016 presentation on the Slavic Adaptation of Music in 'Witcher 3'[e][16]

Visual Pillars

- evoke emotions by visual means

- used when words are not enough to express intangible qualities of the design[17]

- very effective way to explore the visual style of the project[18]

  – can trigger inspiration for new ideas

- can be a simple image from the internet, a commissioned work by an artist, an AI-generated image or a set of images (mood board)

Visual Pillars – Midjourney[i]

- AI-based image generator operated through Discord

- cost-efficient & time-efficient

- requires little to no artistic skills

- requires some proficiency in prompt-writing
  - otherwise easy-to-learn and works out-of-the-box

Visual Pillars – Midjourney Example (cont.)

"/imagine Aerial view, 2d high quality art style. Concept art of an alien natural park. exotic plants, unique animals, photorealism, hyper detailed, vivid colors, realistic high detail 4k render, vibrant volumetric lighting, strong contrast, ray tracing --aspect 16:9 --v 5"

Fig. 2.
AI-generated image by Midjourney[i].

Acoustic Pillars

- used to induce a certain emotion by auditory means

- can range from short sound effects to full movie soundtracks

- musical skills not necessarily needed

  – royalty free music libraries + film scores

- AI-based sound generators → **MusicLM**

Acoustic Pillars – MusicLM[23]

- generates high-fidelity music from text descriptions

  – not available to public yet

- can combine multiple prompts with fixed timeframes and morph them together into a single composition:

  – time to meditate (0:00-0:15)

  – time to wake up (0:15-0:30)

  – time to run (0:30-0:45)

  – time to give 100% (0:45-0:60)

Custom Pillars

- combing different pillars of the three basic types can drastically alter their semantic meaning, resulting in custom pillar

  – situational and customizable

- depends on the type of game

  – some common game elements that need a dedicated custom pillar:

    ▷ characters, factions, locations, soundtrack, etc.

- **general rule**: every game element that plays a central role in your game could have its own dedicated custom pillar

Unique Pillars

- all other pillars that break the conventional classification of textual, visual and acoustic

- in the end, anything can be a pillar

  – as long as it drives the decision making process forward

- **examples**

  – 'The Witcher'[e] → Andrzej Sapkowski's[26] book series

  – 'Stray'[j] → cats were brought to the office to study and reproduce their behaviour and movement

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Features

- any type of game element that interacts with the players directly

- toolkit that the developers provide for the players to explore the pillars

  − actual implementation of the pillars → should always be aligned

- always consider feasibility of features

  − technical, organizational and monetary restrictions

Example

- set of features by M. Eff in "Pillars, Goals, Features & Elements"[7]

  – steer and modify your own privateer vessel

  – acquire more vessels and strengthen your pirate fleet

  – set sail towards uncharted lands […]

- specific player actions are described

  – vs. pillars, which are purposefully left open-ended

User Stories

- features can be almost infinitely refined

  – more fine-grained with each iteration

    ▷ eventually no longer possible to split

      ◻ transform into user story → smallest unit of work in the agile environment

- the point where the Ludodome approach and the agile framework touch base to reveal a highly efficient synergy

Feature-Pillar Disambiguation

- how/why-questions

  - features answer how-questions

  - pillars answer why-questions

- abstraction vs. implementation

  - pillars *could* potentially become part of the game in one form or another at some point

  - features *are certain* to become part of the game in the exact form they are formulated

Feature-Pillar Conflict

- endangers the integrity of the game & the reputation of the developers

- **example**: Heroes of Might and Magic III[k][34][35][36]

  – fantasy, turn-based strategy game, where the player controls one of eight different factions (towns)

  – expansion pack is planned → developers plan to introduce a new futuristic steampunk-science-fiction faction

  – early artwork and sketches is published → community immediately reacts and threatens to boycott the game

  – developers decide to scrap the new faction

Feature-Pillar Conflict (cont.)

Fig. 3.
Side-by-side comparison between the concept art of a unit from the core game (left[37]) and a unit from the unreleased Forge faction (right[35]).

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Goals

- more abstract, compared to pillars and features

- not achievable in the absolute sense

  – design decisions strive towards achieving the goal[5]

- main factor that motivates people to keep playing the game[38]

- serves as the **'north star'** for developers and players alike

  – always a point of guidance, but never really reachable

Goals (cont.)

- should be short and clear

- no more than 1-3 goals per game

  – don't dilute their importance, focalize development in a single direction

- **3 goal types:**

  – continuous goals, e.g. 'League of Legends'[l]

  – fixed goals, e.g. 'Dark Souls'[m] series

  – serious goals, e.g. 'Wii Fit'[n] and 'Pokémon Go'[o]

Goals – A Closing Note

- it's absolutely okay to have the simple goal of "just having fun"

  – many successful games do

- but having a unique goal can prove to be very beneficial

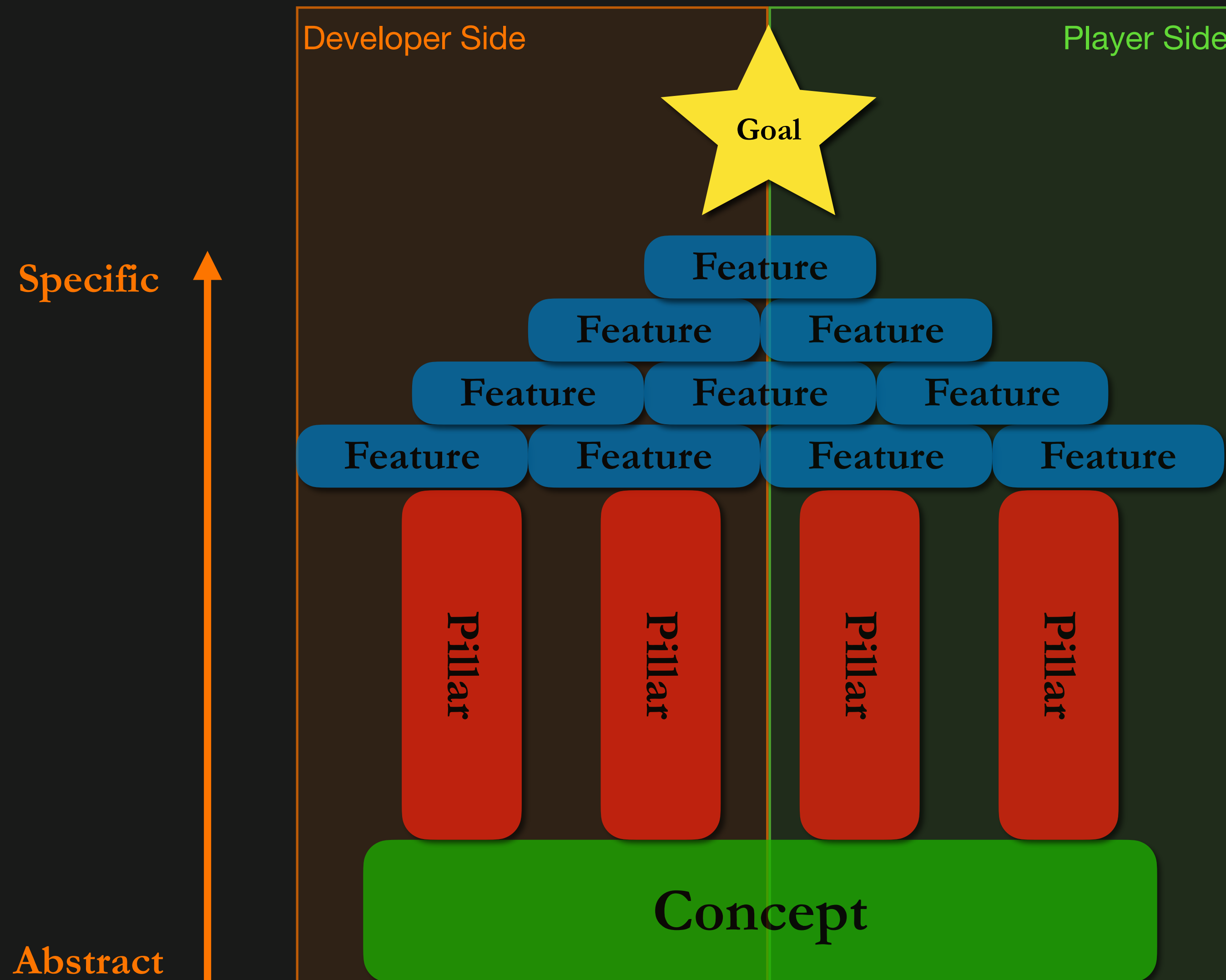 – may also give you a competitive edge over other games

Recap

Fig. 4.
Structural overview of the Ludodome

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In Practice

- inspired by the **Macro/Micro Design** methodology, first presented by Mark Cerny during the D.I.C.E. Summit in 2002[51]

  - **Macro Design**: describes the player experience on the higher abstraction level

  - **Micro Design**: depicts a more detailed description of the game elements

Alignment Table

	Pillar 1	Pillar 2	Pillar 3	Pillar 4	...	Pillar X	Goal
Feature 1					...		
Feature 2					...		
Feature 3					...		
Feature 4					...		
Feature 5					...		
Feature 6					...		
...	...	...	...	...	...	...	...
Feature X					...		

Fig. 5.
Empty Alignment Table

Alignment Table (cont.)

	Pillar 1	Pillar 2	Pillar 3	Pillar 4	...	Pillar X	Goal
Feature 1	✓		✓		...	✓	✓
Feature 2		✓	✗		...		
Feature 3	✓	✓		✓	...	✓	✓
Feature 4	✓	✓			...	✓	✓
Feature 5	✓			✓	...		✓
Feature 6		✓	✓		...	✓	
...		✓			...		...
Feature X	✓		✓		...		✓

Fig. 6.
Filled Alignment Table

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Conclusion

✓ **Customizable framework to facilitate the documentation and development of modern games**

✓ **Provides a strong foundation for the game production**

✓ **Guides developers throughout the development process**

✓ **Produces a consistent, harmonized compendium of documentation**

✓ **Covers almost all types of game documents recommended by J. Schell in his book "The Art of Game Design"[2]**

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Future Work

- To be applied and tested in practice

- Continuous iterative design

- Development of a suite of tools to facilitate the usage of the Ludodome

Thank you!

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