

## **WP8 Dissemination and Exploitation**

**Dr. Jeroen Weermeijer**  
**KU Leuven**

**EC Evaluation June 19th**

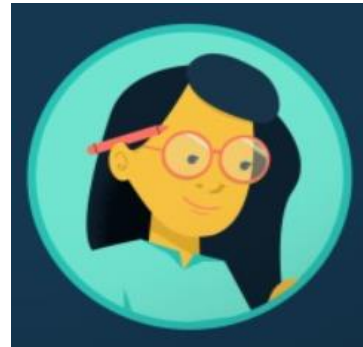


This project has received funding from the European Union's Horizon 2020 research and innovation Programme under grant agreement 945263 (IMMERSE)

## WP8 - Staff



**Dr. Jeroen Weermeijer**  
WP lead



**Noa Yavin**  
Jobstudent



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# WP8 - Objectives



The central goal of IMMERSE is to transfer and scale-up DMMH into routine mental health care in four European countries and beyond. WP8 focuses on dissemination and exploitation activities. This includes **seeking and valorising intellectual property (IP)** generated during the project, and **disseminating the project's objectives, approaches, and findings** to stakeholders and academics. WP8 also designs **exploitation and sustainability plans**, and aims to provide **prediction models for future implementation** of DMMH and other mHealth approaches.



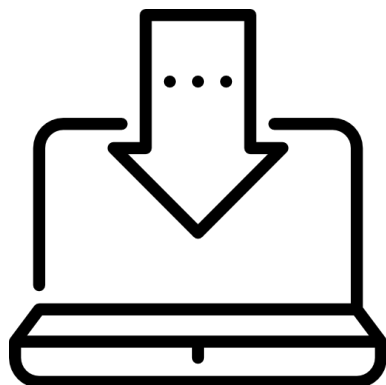
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# WP8 – Task 8.1: Exploitation Steering Group



The Exploitation Steering Group, consisting of the Steering Committee members whose work packages relate to exploitation content, met up to discuss :

- A roadmap for valorisation and exploitation of IMMERSE's research assets.
  - DMMH developed in line with MDR
- Dissemination needs and to brainstorm potential exploitation routes for IP



**Market Analysis and Strategy (D8.3)**



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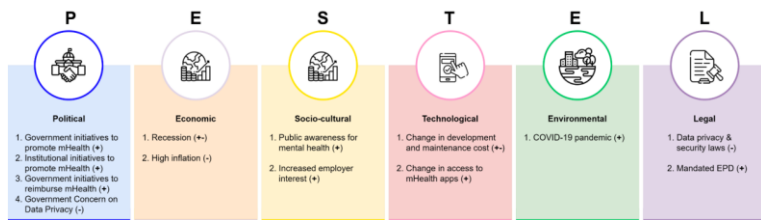
# WP8 – Task 8.1: Exploitation Steering Group



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- Evaluate the market analysis and strategy report and provided feedback to WP8 for modifications.

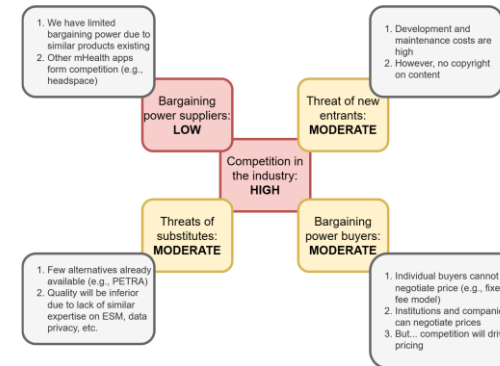
$$\begin{array}{l}
 2 > -3 & + \\
 0.999\dots = 1 & \infty \\
 \pi \approx 3.14 & \times \\
 \sqrt{2} & 1 + 2 \cdot 3 & 5^2 \\
 5(2+2) & (1-2) + 3 \\
 101_2 = 5_{10} & \div
 \end{array}$$



## DMMH SWOT ANALYSIS

STRENGTHS	WEAKNESSES
1. Evidence-based 2. Credible team 3. Tailored to end-users 4. Easy to access 5. Secure software 6. Medical device compliant	1. No copyright on ESM questionnaires, data analysis, and visualization 2. Does not operate offline 3. Little marketing experience 4. Unclear selling proposition
OPPORTUNITIES	THREATS
1. Free-exposure through gov./ins. 2. Selling to study participants 3. Untapped market	1. Direct competitors 2. Large corporations 3. Novel regulatory frameworks 4. Lack of time to adopt DMMH

## PORTER'S FIVE FORCES



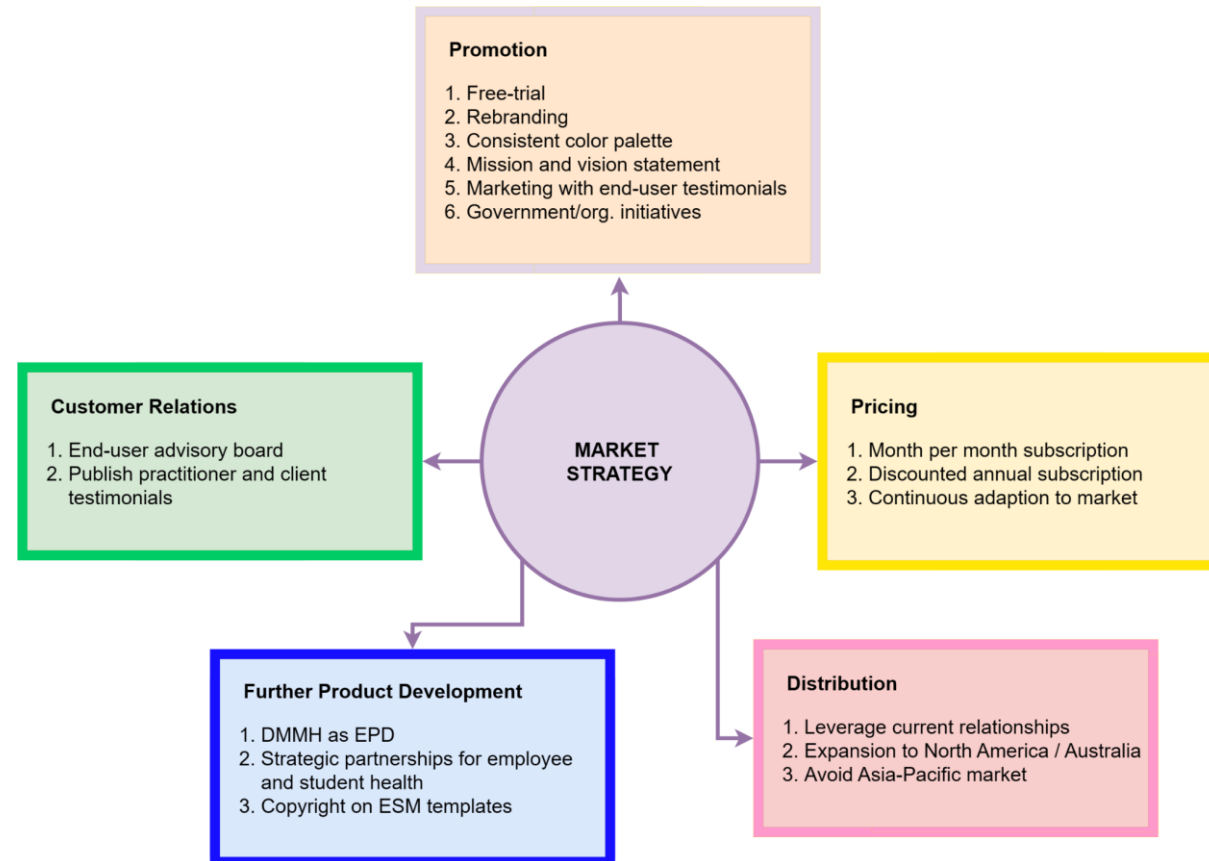
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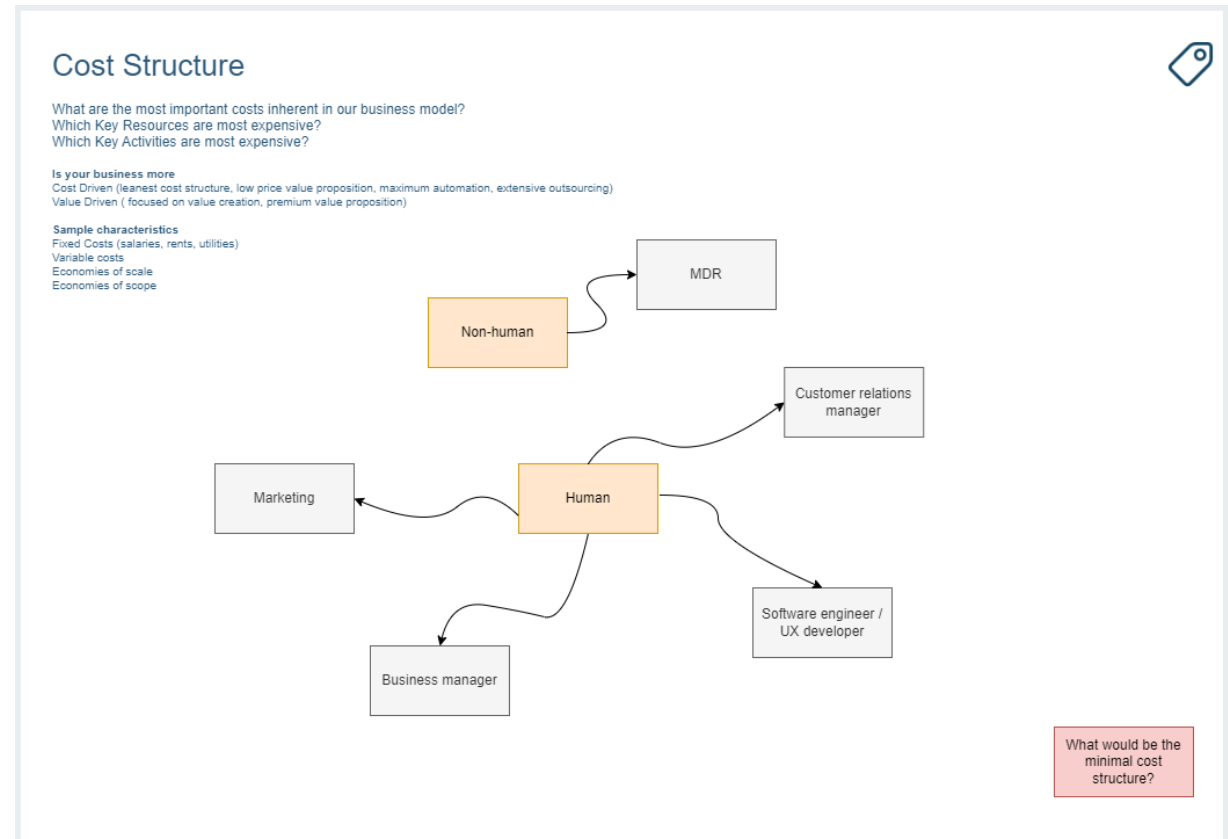


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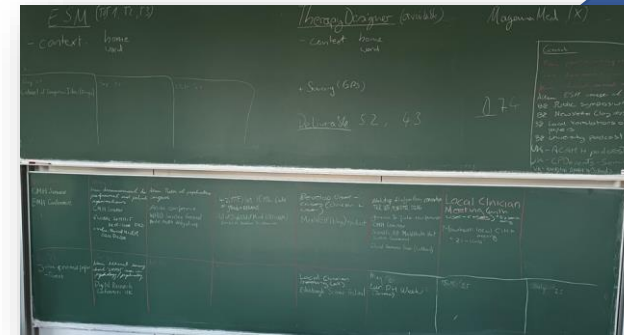
- ESG met to discuss intellectual property and potential pricing strategy. ESG re-evaluated intellectual property and discussed patent search results from Espacenet.
- ESG began developing a business model using Osterwalder's business model canvas and conducting preliminary IP due diligence, both of which are ongoing tasks.



# WP8 – Task 8.2: Dissemination Plan



The dissemination plan ensures that all the relevant stakeholders are informed of the IMMERSE project's outcomes, with a focus on socio-economic, policy, translational and policy impact. The dissemination plan was evaluated in cooperation with the other Work Package leaders, and new dissemination activities were added during the 2024 GA.



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# WP8 – Task 8.3: Scientific Exploitation



We have set up an automatized data checkout system on RedCap, where researchers can submit an abstract with their objectives, analyses, and variables → **DROPS**

- Researchers submit abstracts with objectives, analyses, and variables.
- Data Governance Board (DGB) reviews submissions monthly at steering committee meetings. Abstracts are either approved or declined by the DGB.
- WP8 lead informs authors of DGB decisions.
- Approved authors receive a request to upload detailed preregistration on OSF.
- Preregistration must be appended to the IMMERSE OSF project to acquire data.
- Authors have 6 months post-data availability to preregister and 1 year to submit papers.
- System is accessible to consortium members.
- System underwent iterative updates for optimization.
- Latest update includes a synchronized duplicate Google Doc overview for tracking submissions and approvals.



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## WP8 – Task 8.3: Scientific Exploitation



We have set up an automatized data checkout system on RedCap, where researchers can submit an abstract with their objectives, analyses, and variables.

**21 abstracts submitted**



**16 Approved**



**5 In revision**



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# WP8 – Task 8.4: Commercial Exploitation Plan



WP8 aims to ensure sustainability and scalability of DMMH to become a commercially viable product.

- Market analysis and strategy report (D8.3) for DMMH-like applications developed by WP8.
  - Report reviewed by ESG in April; updates implemented based on feedback.
  - Business case development initiated for commercialization (e.g., pricing, reimbursement pathways).
- Applied and won the VBHC prize 2024 for collaboration
  - ~4k euro worth business school voucher for three team members
- Website layout revamped by WP8; monthly blog post section added to boost traffic; more twitter activity
  - ~ 950 twitter followers
  - 7 blogpost
- Student in communication sciences and graphic design, contributed to dissemination activities:
  - Formatted and edited newsletters and blogs.
  - Planned promotional video content.
- Opinion piece



# WP8 – Task 8.5: White paper on forecasting models



White paper on forecasting scenarios that can guide decision-makers in tuning policies to optimize digital mobile mental health technology widespread adoption and impact on stakeholders and healthcare systems






- Work on this deliverable has commenced in M36 and is due to be completed in time (31/3/25)
- ‘App-timizing Tech for Mental Healthcare — A White Paper on Streamlining Digital Mobile Mental Health Implementation Across Europe’
- Collaborative effort between WPs and in relation to IMMERSE results



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# WP8 – Deliverables & Milestones



Milestone / Deliverable No.	Title	due	Status
D8,1	Exploitation Steering Committee Charter	37/7/21	
D8,2	Dissemination plan	30/9/21	
D8.3	Market analysis and strategy	31/3/23	
D8.4	White paper on forecasting models	31/3/25	
MS14	Market for DMMH mapped	31/3/23	



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# WP8 – Challenges, delays, and solutions



Challenges	Solution
Risk for insufficient interest of stakeholders (e.g., clinicians, hospitals, service users) in our dissemination activities	Increase dissemination efforts; explore novel contact routes and methods (e.g., promotional video)
Conflict about IPR between partners that cannot be solved at the level of ExMC and GA	Involve an external mediator.



# WP8 – Attended Events



## Value Based Healthcare Prize, 2024 – Amerongen, The Netherlands



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## WP8 – Next steps



1. Monitor and enhance dissemination initiatives for the DROPS project.
2. Expand outreach and engagement efforts.
3. Finalize the business model canvas.
4. Forecast favorable trial outcomes and preemptively strategize spin-off structuring.
5. Author a white paper detailing forecasting models.



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# INNOVATION RADAR



1. Co-creation of ESM questionnaire.
2. Scannable QR-code
3. App for completing questionnaires.
4. Automatic data visualization.
5. Use of visualizations in therapy

## Unique selling points:

- Product developed in line with MDR
- Secure
- Evidence-based



# INNOVATION RADAR



- **The DMMH innovation is...**
  - ⇒ **A product with multiple owners (i.e, consortium partners)**
  - ⇒ **Contributes to UN Sustainable Development Goal 3: Good Health and Well-being**
  - ⇒ **A significantly improved product (i.e., ESM software for the clinic)**
  - ⇒ **Innovative but it may be difficult to convert customers**
  - ⇒ **Will be introduced as a novel product (i.e., little to no existing use of ESM in clinics)**
    - ⇒ **Can be commercialized within 1-3 years conditional on positive trial results**
    - ⇒ **We will need between €500K and €2M to realize commercialization**



# INNOVATION RADAR



## Market Analysis: mHealth apps for mental healthcare

- ⇒ **Broad / Narrow**
- ⇒ PESTEL analysis
- ⇒ Porter's five forces
- ⇒ SWOT analysis



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# Market Analyses and Pricing Strategy

## *Market overview on mHealth*

→ **BROAD scope: mobile technologies, such as smartphones, tablets, and wearables, to deliver healthcare services.**

### **1. Market size**

- **What was the total amount of revenue from sales of, for 2022, mHealth products and services?**

### **2. Growth rate**

- **What do experts say on compounded annual growth rate (CAGR)?**

### **3. Geographical spread of revenue**

- **Where is the money to be made?**

**Solution: analyse multiple extensive market reports**





Market report analysis



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*Answers to broad scope questions:*

1. **2022 market size? median 57.3 Billion EUR, with a range between 42.1 and 120.1 Billion EUR.**
  - I. **Unclear what percentage attributable to mHealth apps like DMMH**
  - II. **Market sufficiently large to attract investors**
  
2. **median CAGR rate? reported was 14,95%, with a range between 10.8% and 34,8% for a median of 9 years and a range of 6 to 10 years.**
  - I. **Outperforms current inflation**
  - II. **Outperforms S&P500 average annual rate of return (~10%)**
  - III. **Abundance of growth drivers as compared to growth limiters**
  
3. **Current geographical spread of revenue?**
  1. **North America ~40%, EU ~30%**
  2. **However, Asia Pacific mentioned as most potential for growth**



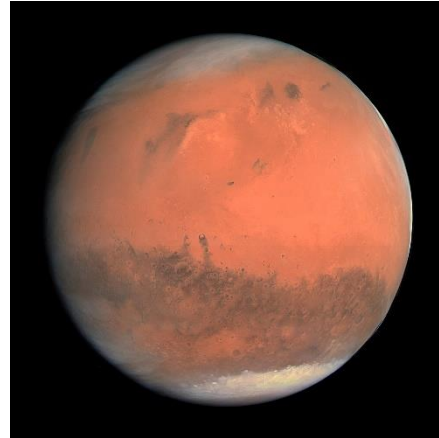
**Broad** → **Narrow**



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# Potential Market size for DMMH



**MaRs: calculate the total amount of potential revenue**

$$\text{Market Size} = \sum_{n=1}^{\text{number of customer types}} (\text{Customer Type } n) \times (\text{Penetration rate } n) \times (\text{value per sale } n)$$



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$$\text{Market Size} = \sum_{n=1}^{\text{number of customer types}} (\text{Customer Type } n) \times (\text{Penetration rate } n) \times (\text{value per sale } n)$$

### Customer types:

- a) Mental health institutions/practitioners
- b) Medium-sized companies
- c) Large companies
- d) Universities

### Penetration rate:

- a) 10 – 40%
- b) 2 – 6%
- c) 2 – 6%
- d) 2 – 6%

### Value per sale:

- a) €60-120 p/y per practitioner
- b) €600-1,200 p/y
- c) €2,400-4,800 p/y
- d) €1.2-2.4 p/y per student

business product

commercial product



	Mental Health Institutions	Mental health practitioners	Companies	Universities and colleges
Belgium	118*	10.785 Psychologists 1.958 Psychiatrists	4.221 Medium 944 Large	73 Universities and colleges 279.145 Students
The Netherlands	2.042	15.000 Psychologists 3.500 Psychiatrists	9.200 Medium 1.880 Large	105 Universities and colleges 340.000 Students
Australia	161*	10.716 Psychologists 3.615 Psychiatrists	59.355 Medium** 4.533 Large**	43 Universities, ?? colleges 1.622.894 Students
UK	1.026	46.400 Psychologists 13.130 Psychiatrists	35.940 Medium 7.675 Large	285 Universities and colleges 2.182.560 Students
USA	12.275	181.600 Psychologists 25.520 Psychiatrists	36.3269 Medium 51.795 Large	3.982 Universities and colleges 19.400.000 Students
Canada	128*	19.591 Psychologists 4.770 Psychiatrists	22.725 Medium** 2.936 Large**	436 Universities and colleges 1.400.000 Students
Germany	738*	36.514 Psychologists 23.438 Psychiatrists	55.740 medium 11.317 large	422 Universities and colleges 2.950.000 Students
Slovakia	54*	295 Psychiatrists 287 Psychologists	1.129 Medium 224 Large	35 Universities and colleges 131.083 Students
<b>TOTAL</b>	<b>16.542</b>	<b>320.901 Psychologists</b> <b>76.218 Psychiatrists</b>	<b>551.579 Medium</b> <b>81.304 Large</b>	<b>5.381 Universities and colleges</b> <b>28.304.682 Students</b>

\*does not include private enterprises

\*\*Australia defines medium-sized companies as companies with 20 to 199 employees and large companies as companies with more than 200 employees. Canada applies a 100-499, 499+ criterion. These criteria differ from other geographical regions, in which the 50-250, 250+ criteria is used.

*Note: Numbers reported in this table reflect the most recently available historical data that we could identify. They are, at best, interpreted as a rough estimate. True numbers are likely to be higher, provided that the mental healthcare industry is rapidly growing.*



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	Customer Count	Penetration rate	Pricing	Estimate
Mental health institutes	16.542	0,1-0,4	*	*
Psychiatrists and psychologists	397.119	0,1-0,4	€60-120	From €2.382.714 to €19.061.712 per year
Medium-sized companies	551.579	0,02-0,06	€600-1.200	From €6.618.948 to €39.713.688 per year
Large-sized companies	81.304	0,02-0,06	€2.400-4.800	From €3.902.592 to €23.415.552 per year
Universities and colleges	5.381	0,02-0,06	*	*
Students	28.304.682	0,02-0,06	€1,2-2,4	From €679.312 to €4.075.874
			<b>Total:</b>	<b>From €13.583.566 to €86.266.826 per year</b>

**Enough?**

**IMEC iStart program: minimum revenue of 1 Million euros within a three-year timeframe.**

**However, ... note at where most potential revenue is situated**



	Customer Count	Penetration rate	Pricing	Estimate
Mental health institutes	16.542	0,1-0,4	*	*
Psychiatrists and psychologists	397.119	0,1-0,4	€60-120 (x30)	<b>From €71.481.420 to €571.851.360 per year</b>
Medium-sized companies	551.579	0,02-0,06	€600-1.200	From €6.618.948 to €39.713.688 per year
Large-sized companies	81.304	0,02-0,06	€2.400-4.800	From €3.902.592 to €23.415.552 per year
Universities and colleges	5.381	0,02-0,06	*	*
Students	28.304.682	0,02-0,06	€1,2-2,4	From €679.312 to €4.075.874
			<b>Total:</b>	<b>From €82.682.272 to €639.056.474 per year</b>

**Alternative pricing model → reimbursement (government or insurance)**

**Product is free for practitioners, but cost is billed to the client's insurance (e.g., same as how kidney dialysis is billed following doctor prescription)**

**Assumption: ~30 clients per year**

**→ The reimbursement pathway is crucial for business development**



# INNOVATION RADAR



- **The DMMH innovation is...**
  - ⇒ **A product with multiple owners (i.e, consortium partners)**
  - ⇒ **Contributes to UN Sustainable Development Goal 3: Good Health and Well-being**
  - ⇒ **A significantly improved product (i.e., ESM software for the clinic)**
  - ⇒ **Innovative but it may be difficult to convert customers**
  - ⇒ **Will be introduced as a novel product (i.e., little to no existing use of ESM in clinics)**
    - ⇒ **Can be commercialized within 1-3 years conditional on positive trial results**
    - ⇒ **We will need between €500K and €2M to realize commercialization**
      - ⇒ **MDR associated costs; Personnel costs; Software maintenance and updating**
      - ⇒ **Downside: competitive market / large organizational needs to fulfil market potential**





**Industry and Market segment can attract investors! However...**

**→ Macro-environmental factors affecting business success?**

**PESTEL analysis**

**→ Competitive landscape of the market segment?**

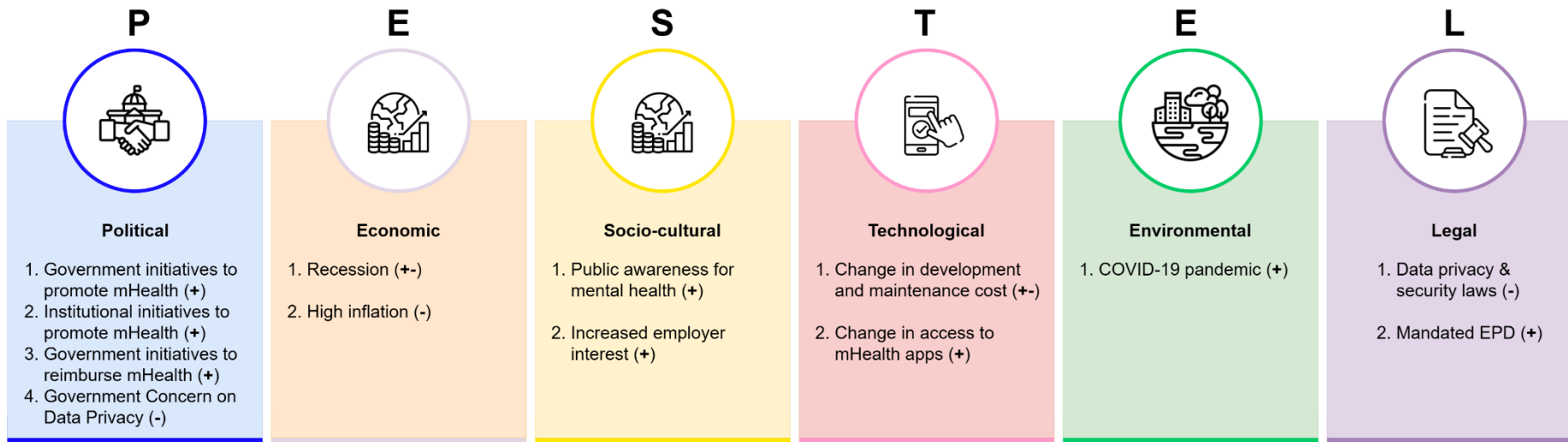
**Porter's five forces framework**

**→ What are strengths, weaknesses, opportunities, and threats to our product?**

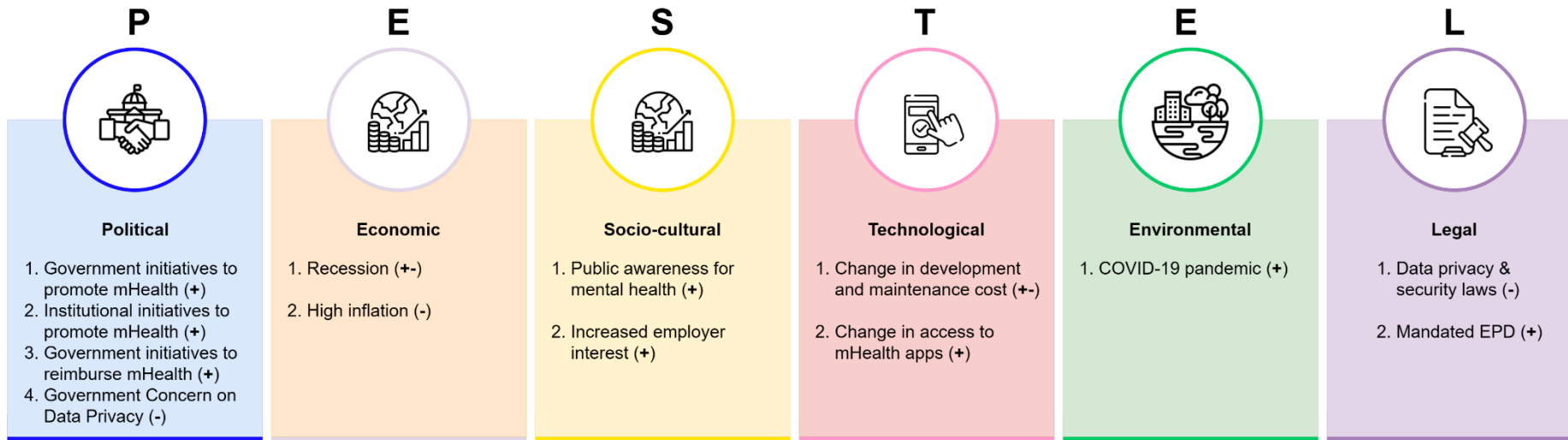
**SWOT analysis**







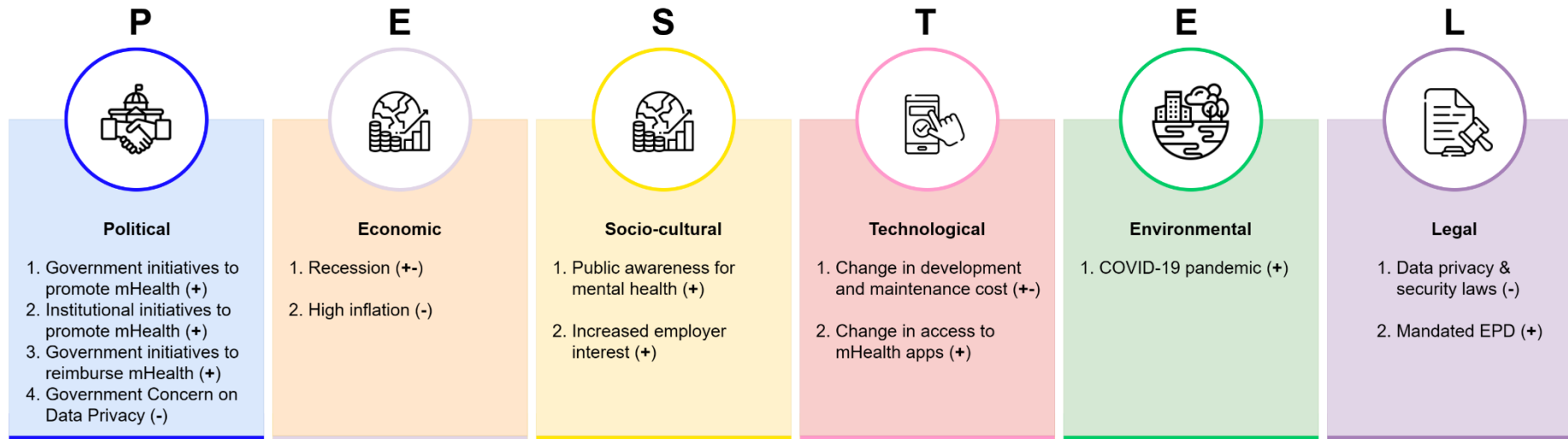
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- Belgium gov. → [mHealthbelgium.be/apps](https://mHealthbelgium.be/apps)
- Dutch gov. → [zorgvannu.nl/innovaties/overzicht](https://zorgvannu.nl/innovaties/overzicht)
- APA → [psychiatry.org/psychiatrists/practice/mental-health-apps](https://psychiatry.org/psychiatrists/practice/mental-health-apps)
- German gov. → [bundesgesundheitsministerium.de/en/digital-healthcare-act.html](https://bundesgesundheitsministerium.de/en/digital-healthcare-act.html)
- UK gov. → [gov.uk/government/publications/a-plan-for-digital-health-and-social-care/a-plan-for-digital-health-and-social-care](https://gov.uk/government/publications/a-plan-for-digital-health-and-social-care/a-plan-for-digital-health-and-social-care)
- EU → GDPR

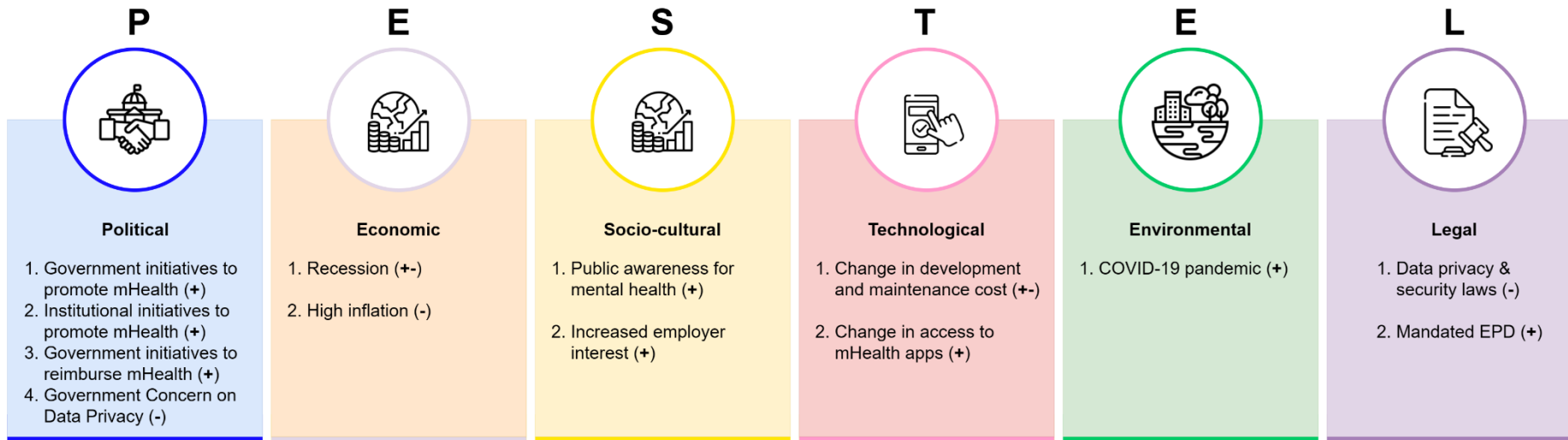


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- Recession: Population mental health declines (Frasquilho et al., 2015)
  - Increases demand for mental healthcare
  - But... decreased consumer spending
- High inflation:
  - Decreases purchasing power

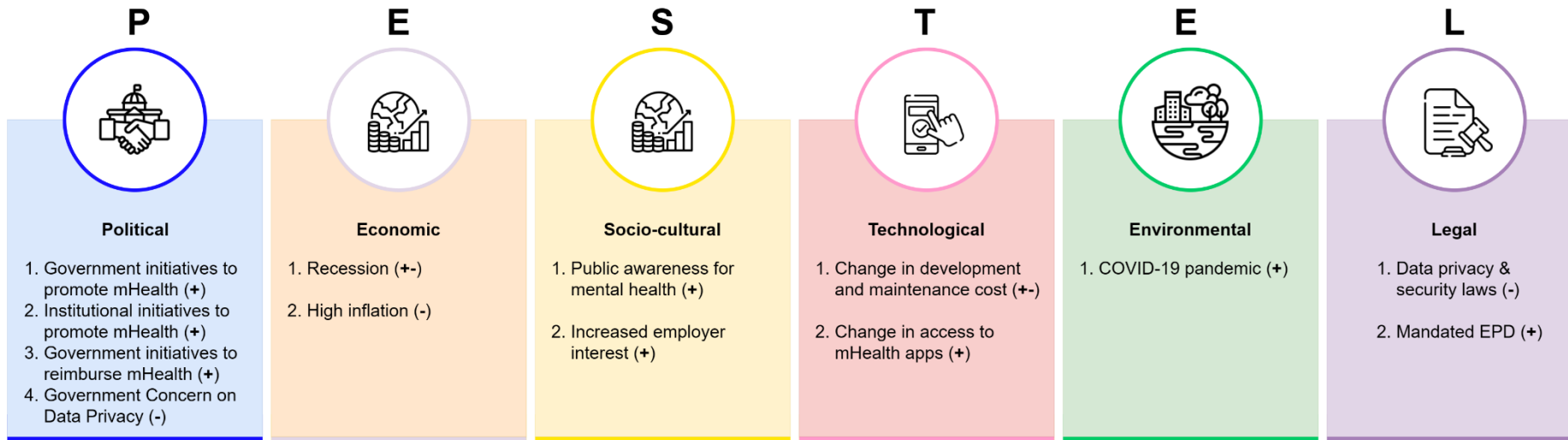




1. Increased public awareness for mental health: media
  - Celebrities (e.g., **Selah Sue**; **Beyonce**)
  - Tragic accidents: (e.g., **2015 Germanwings flight 9525**; **2018 Chongqing bus**)
2. Increased employer interest
  - Negative impact on revenue (e.g., **Ratnawat et al., 2014**)

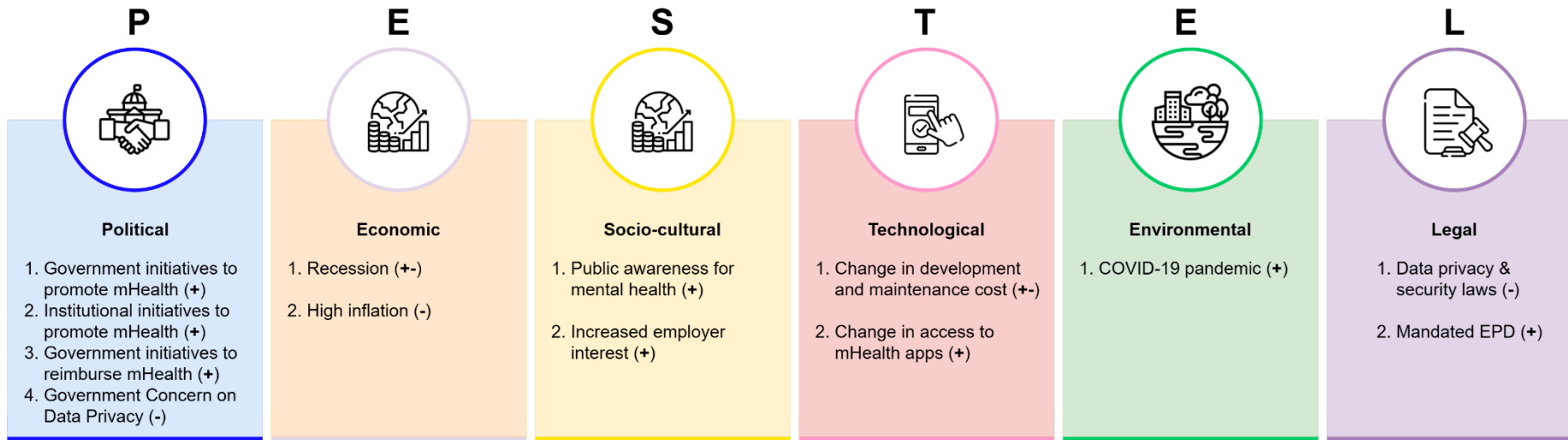


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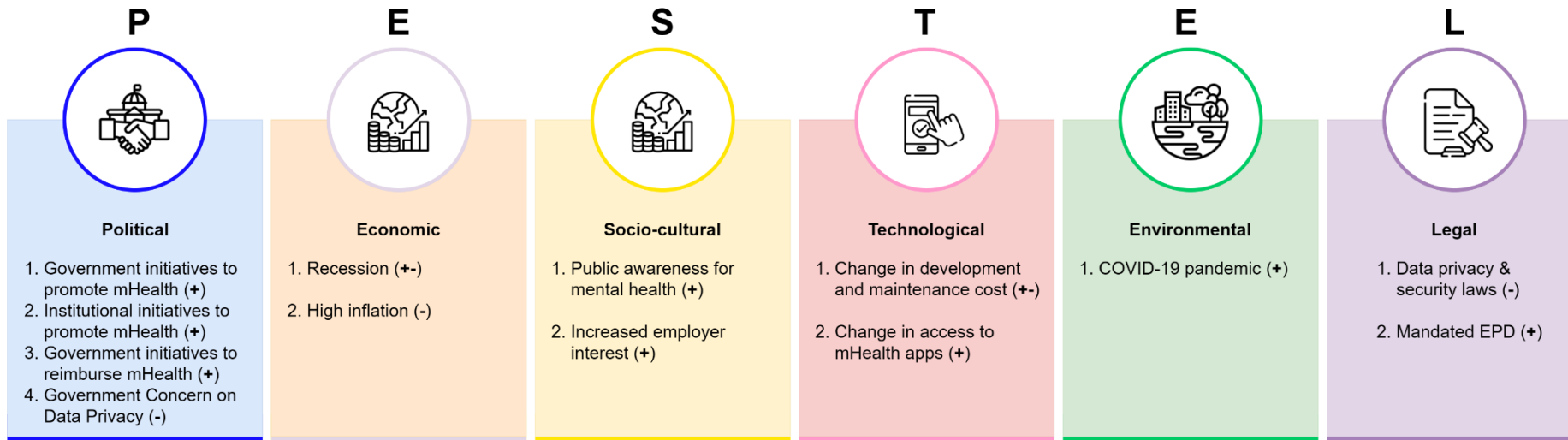
- ↓
1. Changes in development and maintenance costs
    - It's becoming increasingly easier to create apps, this reduces development costs
    - But... regulatory frameworks may increase maintenance
  2. Changes in access to mHealth apps
    - Increased phone ownership





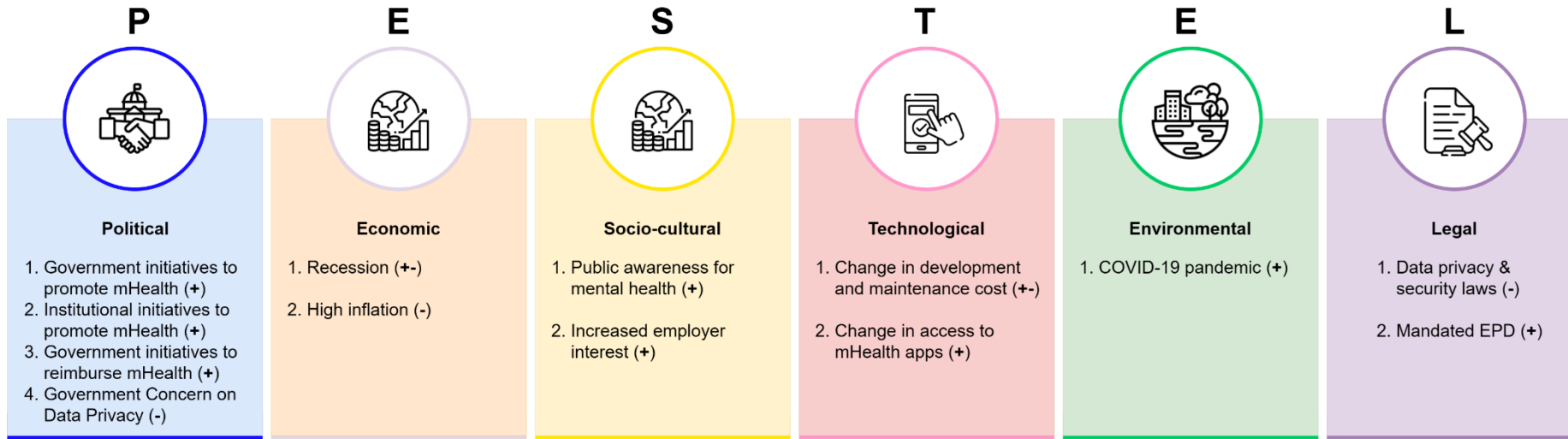
1. COVID-19 pandemic  
 ➤ Digitalization → increased demand for mHealth apps





1. Data privacy & security laws
1. EU: **GDPR**
  2. US: **HIPAA**
2. Mandated EPDs coming up
1. Belgium: **'De kwaliteitswet' & Royal decree**

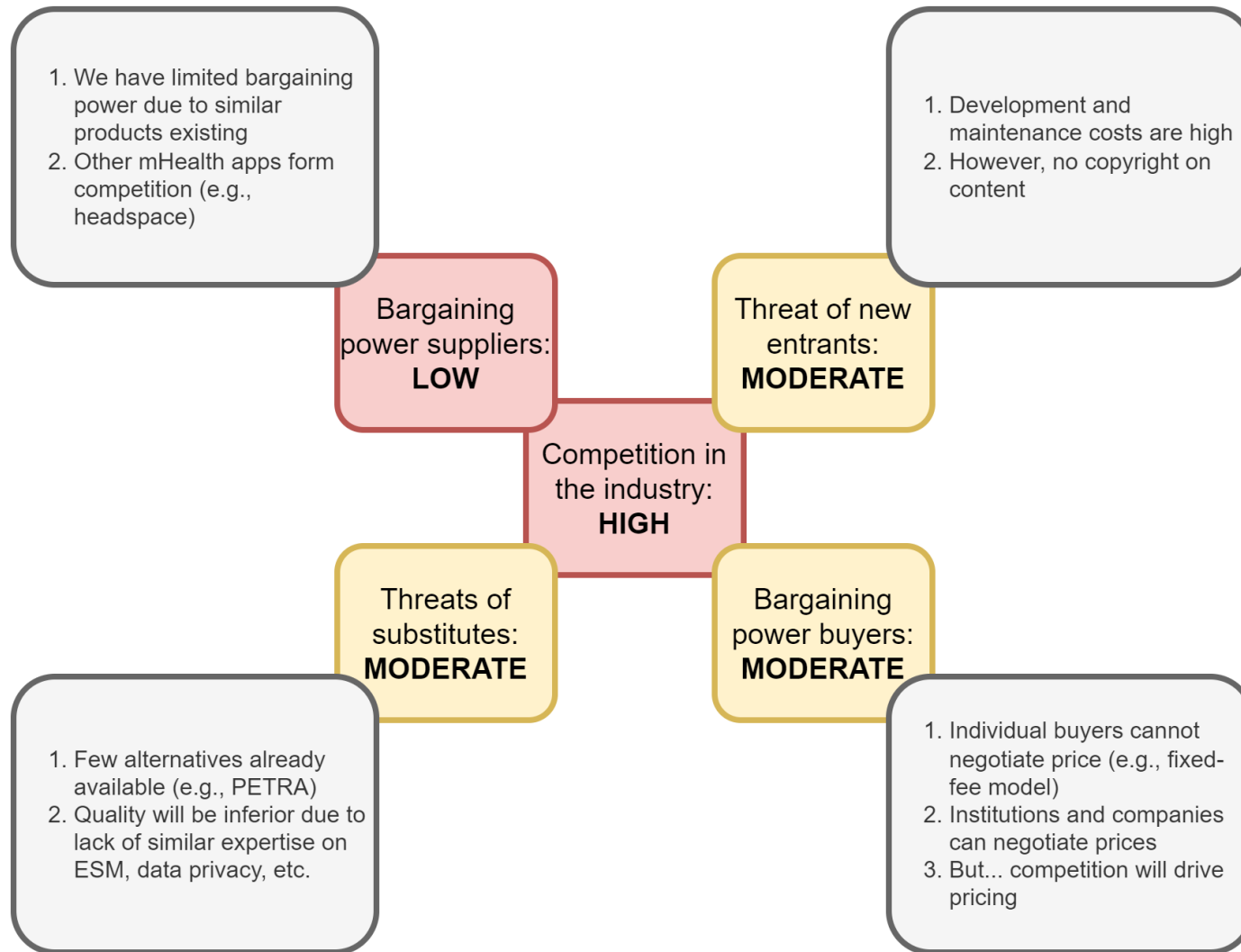




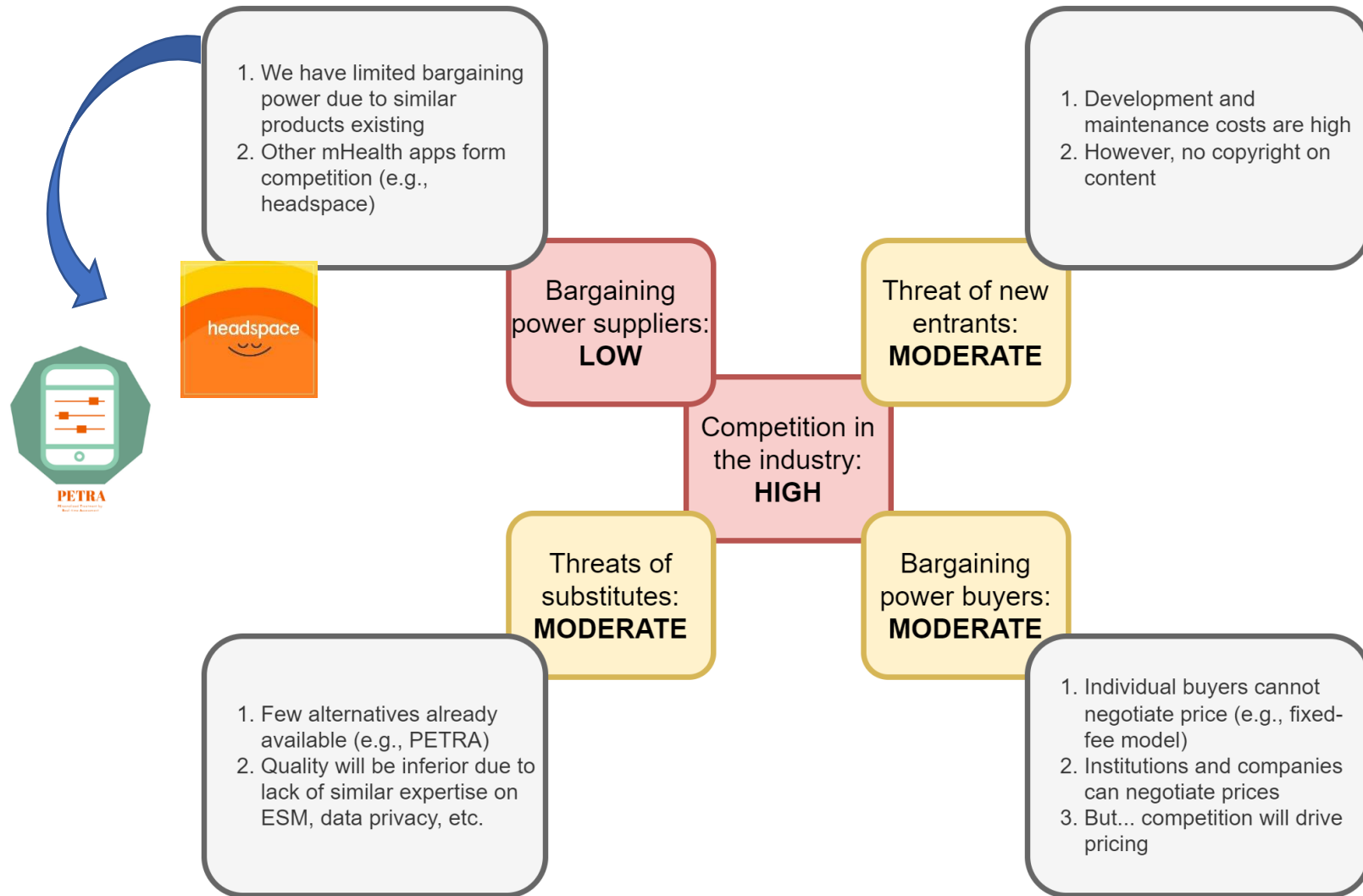
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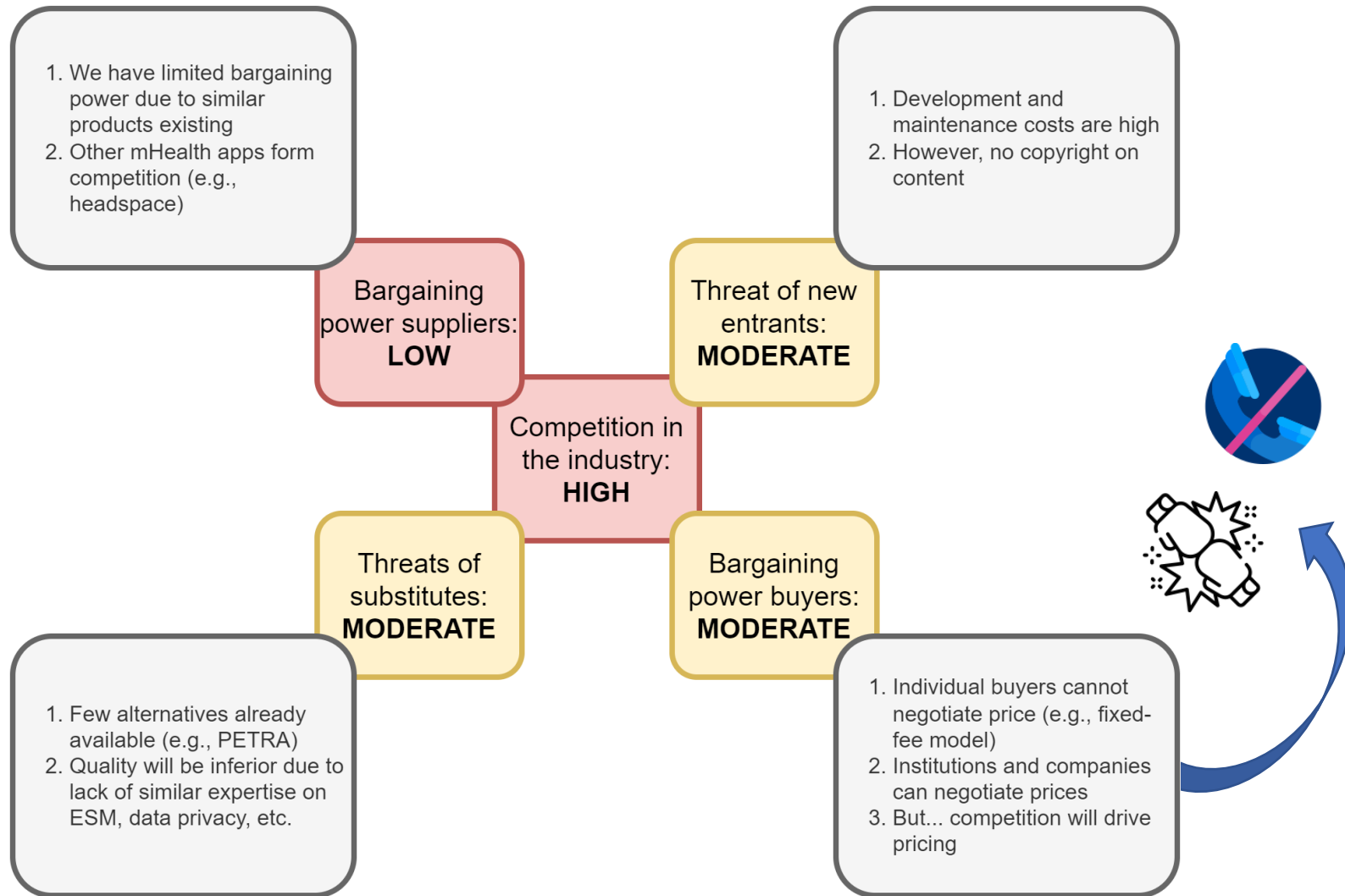
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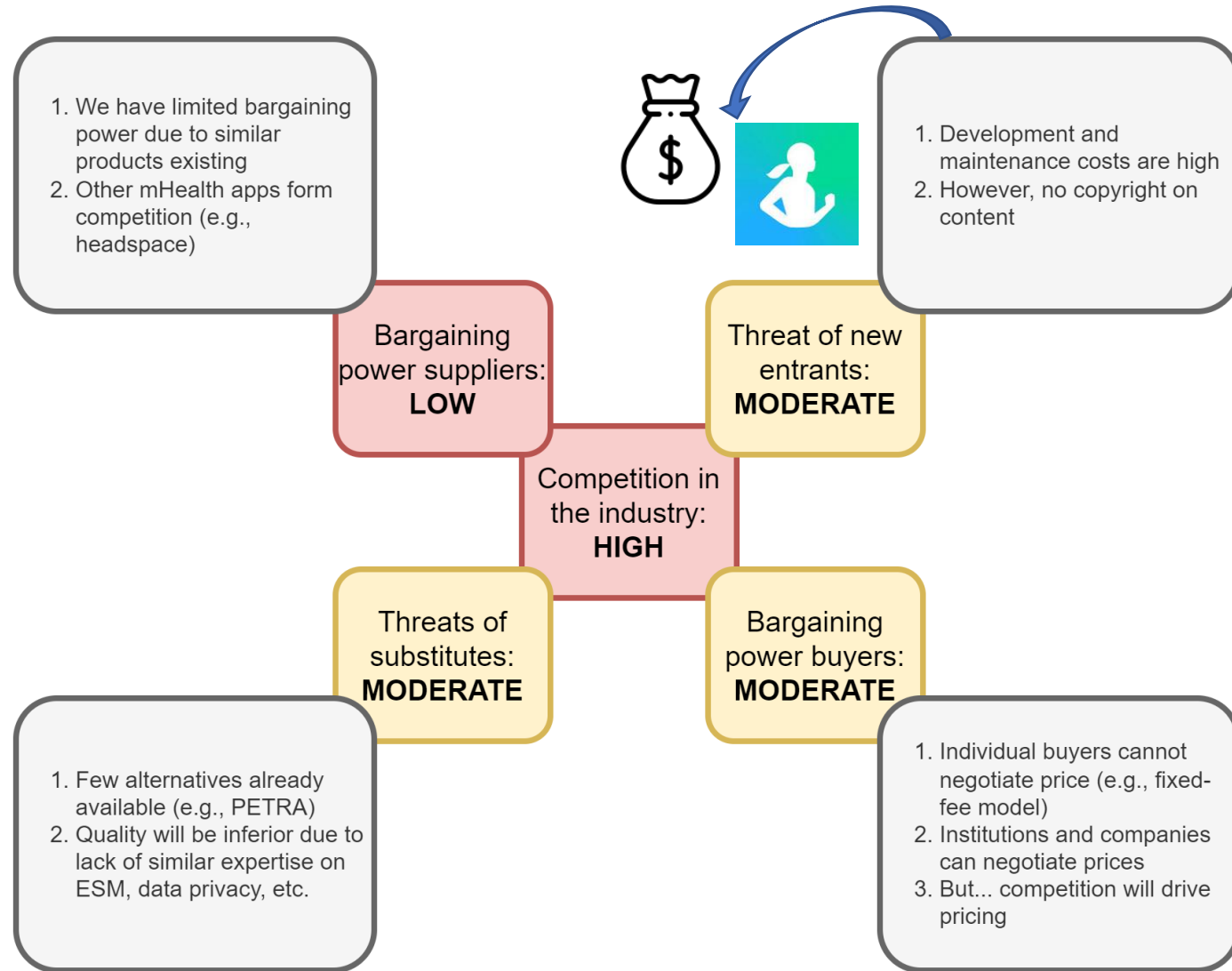
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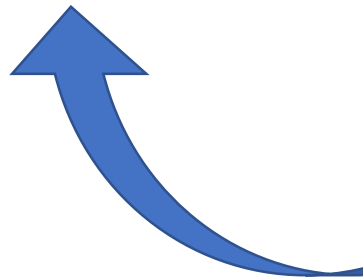
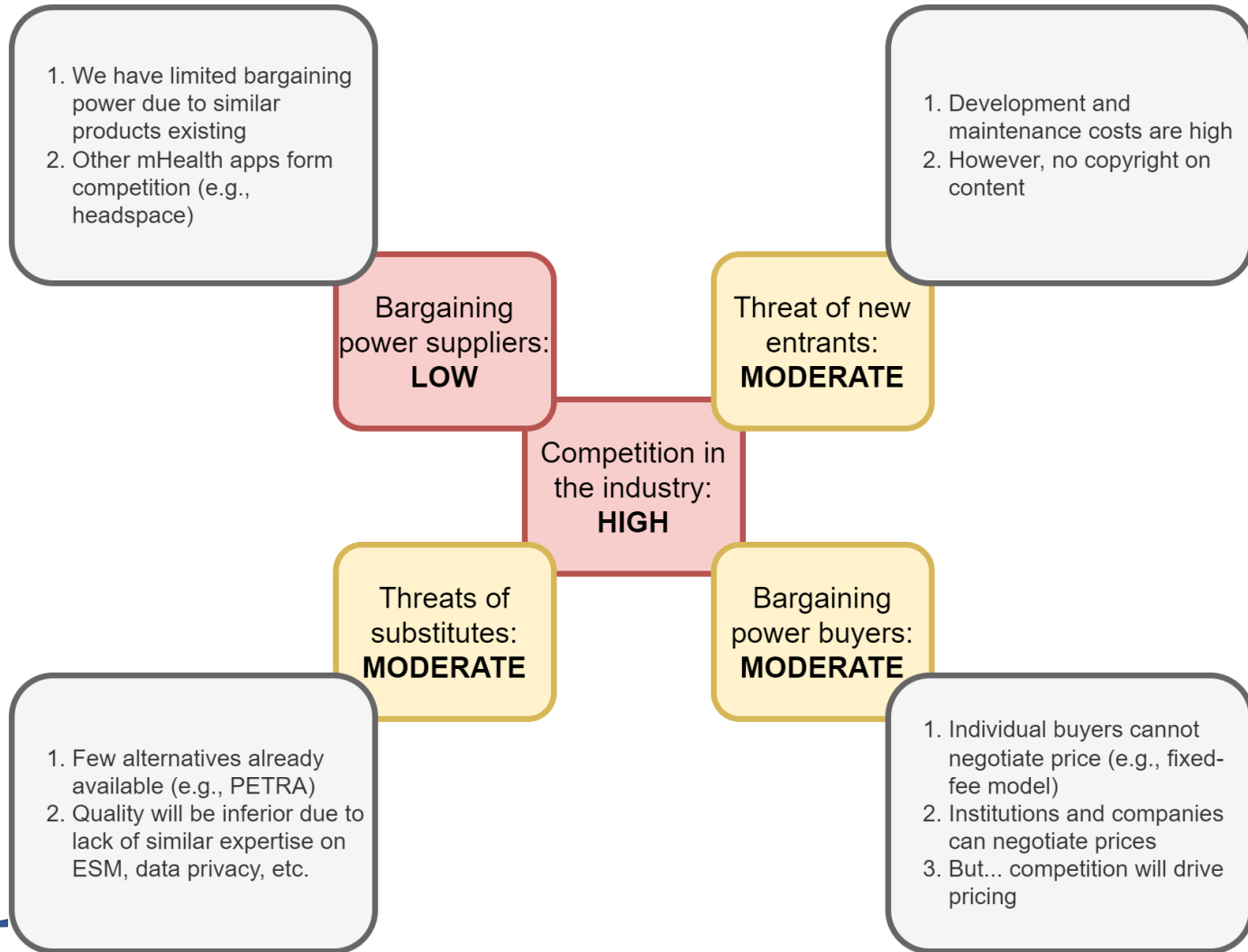
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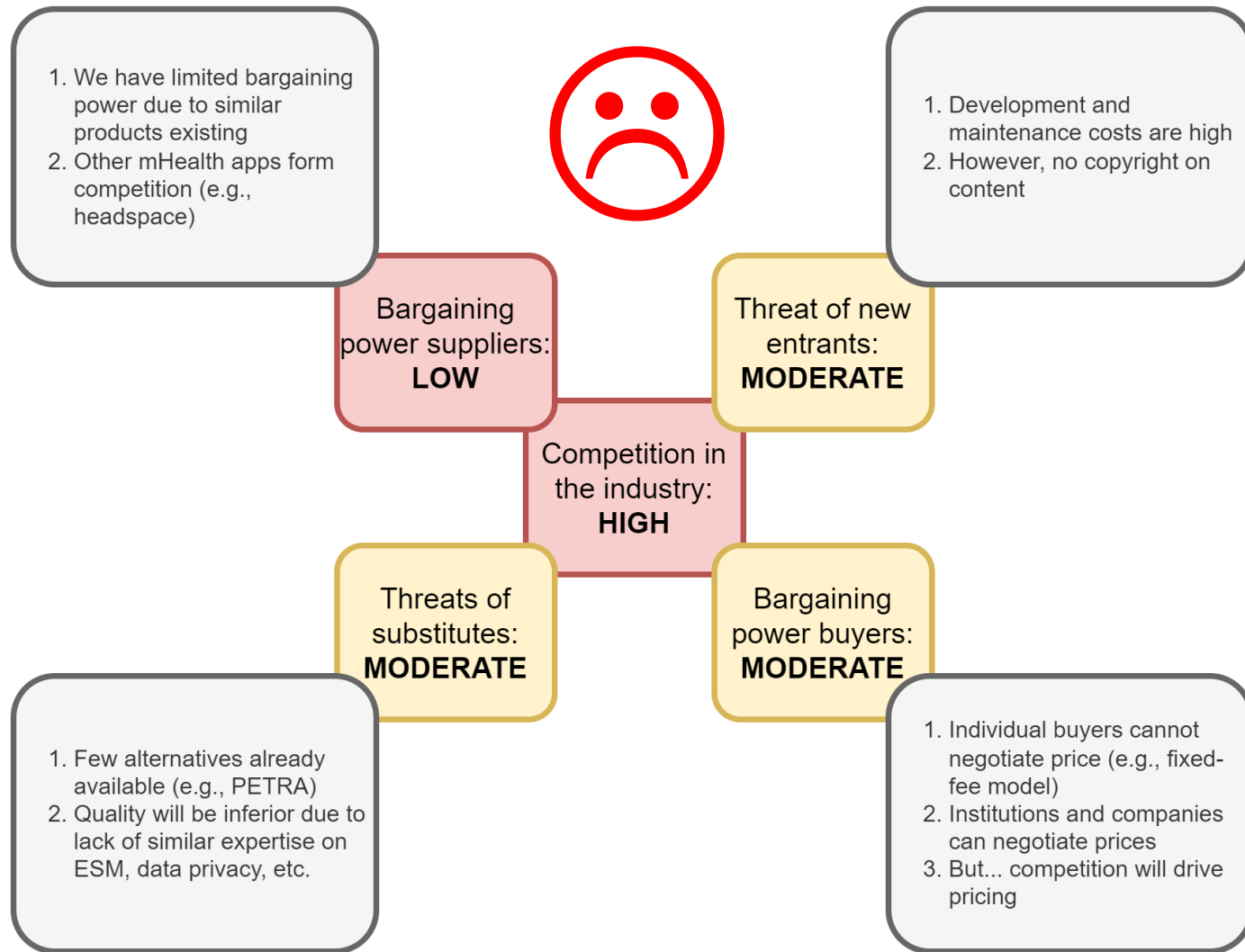
# PORTER'S FIVE FORCES



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# DMMH SWOT ANALYSIS



# WP8 – Overview of tasks

