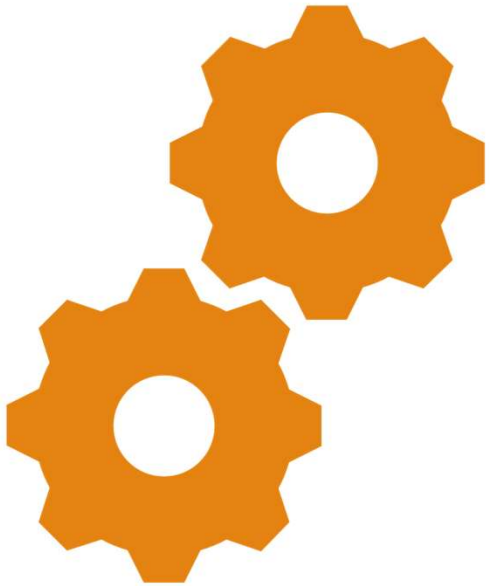
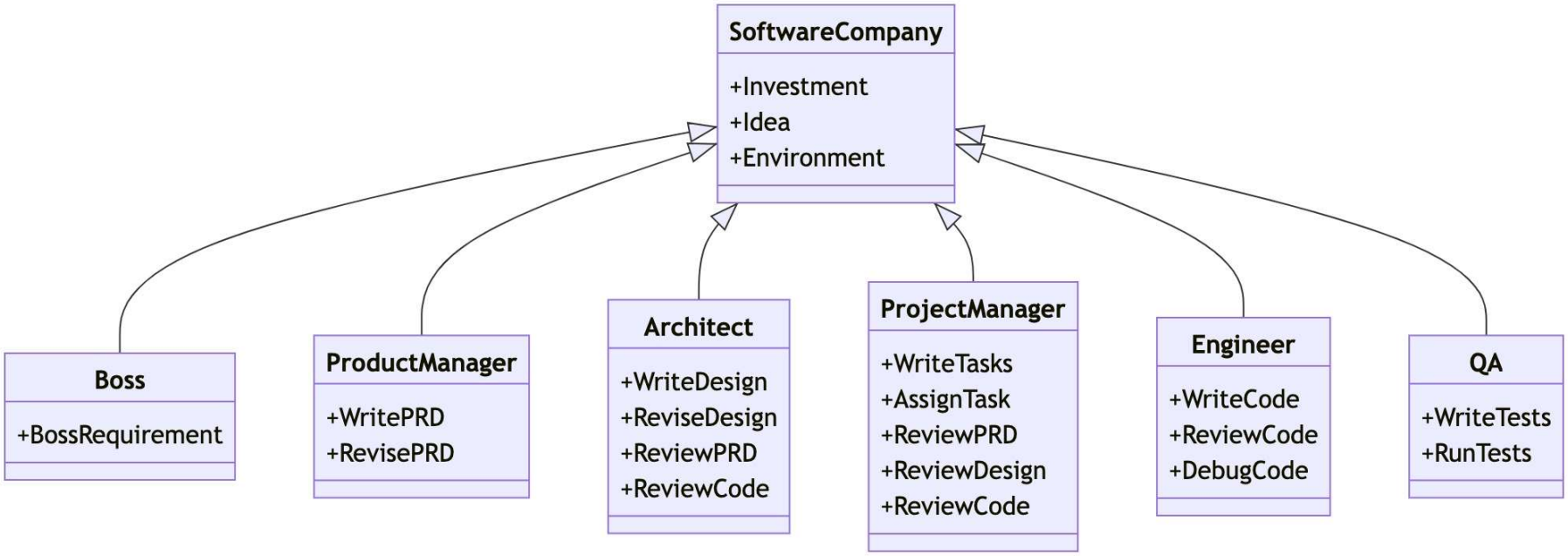
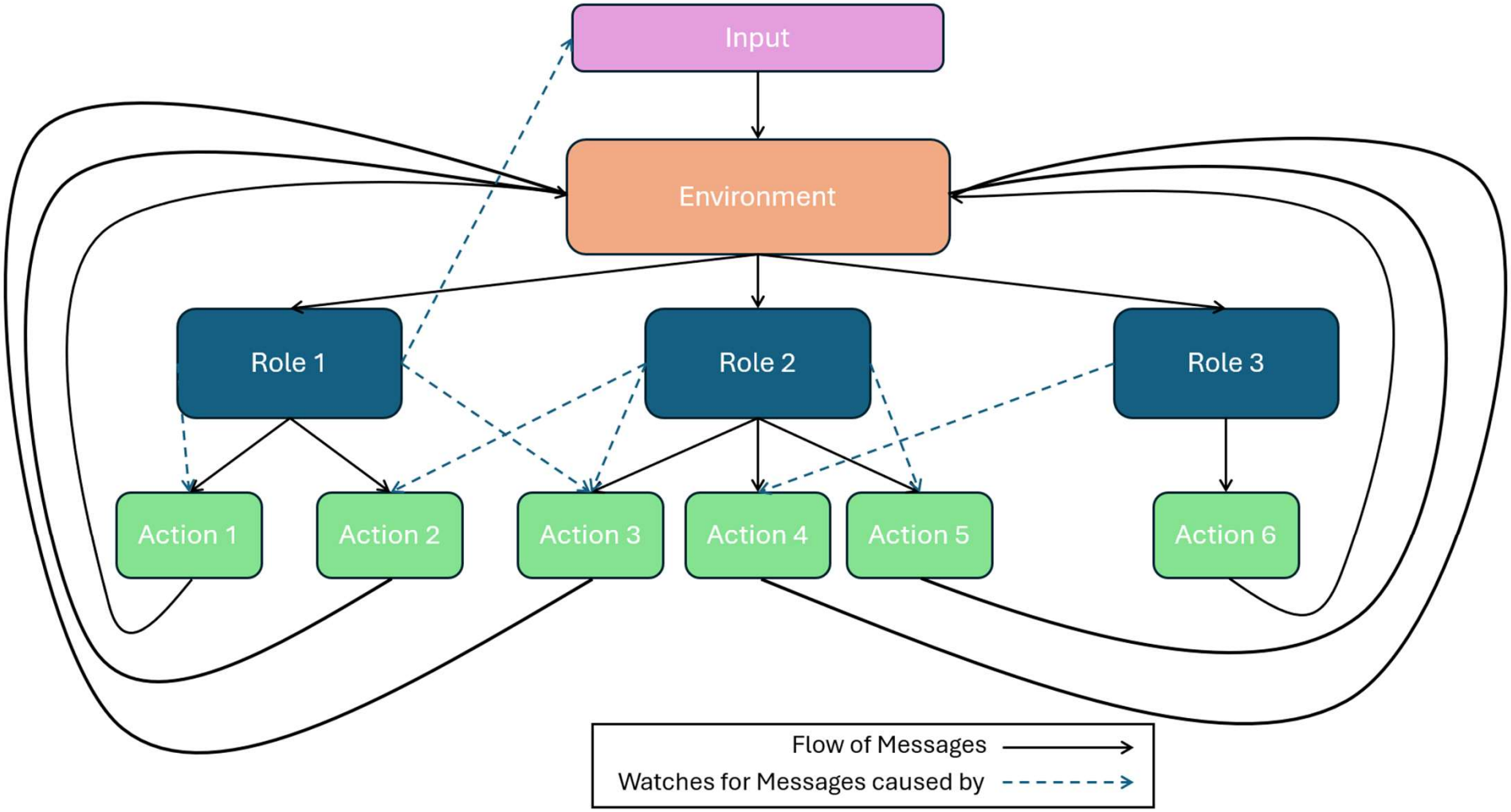


USING THE METAGPT FRAMEWORK TO AUTOMATE THE FUZZY FRONT END OF THE PRODUCT INNOVATION PROCESS

MetaGPT


SoftwareCompany
+Investment
+Idea
+Environment
Boss
+BossRequirement
ProductManager
+WritePRD
+RevisePRD
Architect
+WriteDesign
+ReviseDesign
+ReviewPRD
+ReviewCode
ProjectManager
+WriteTasks
+AssignTask
+ReviewPRD
+ReviewDesign
+ReviewCode
Engineer
+WriteCode
+ReviewCode
+DebugCode
QA
+WriteTests
+RunTests

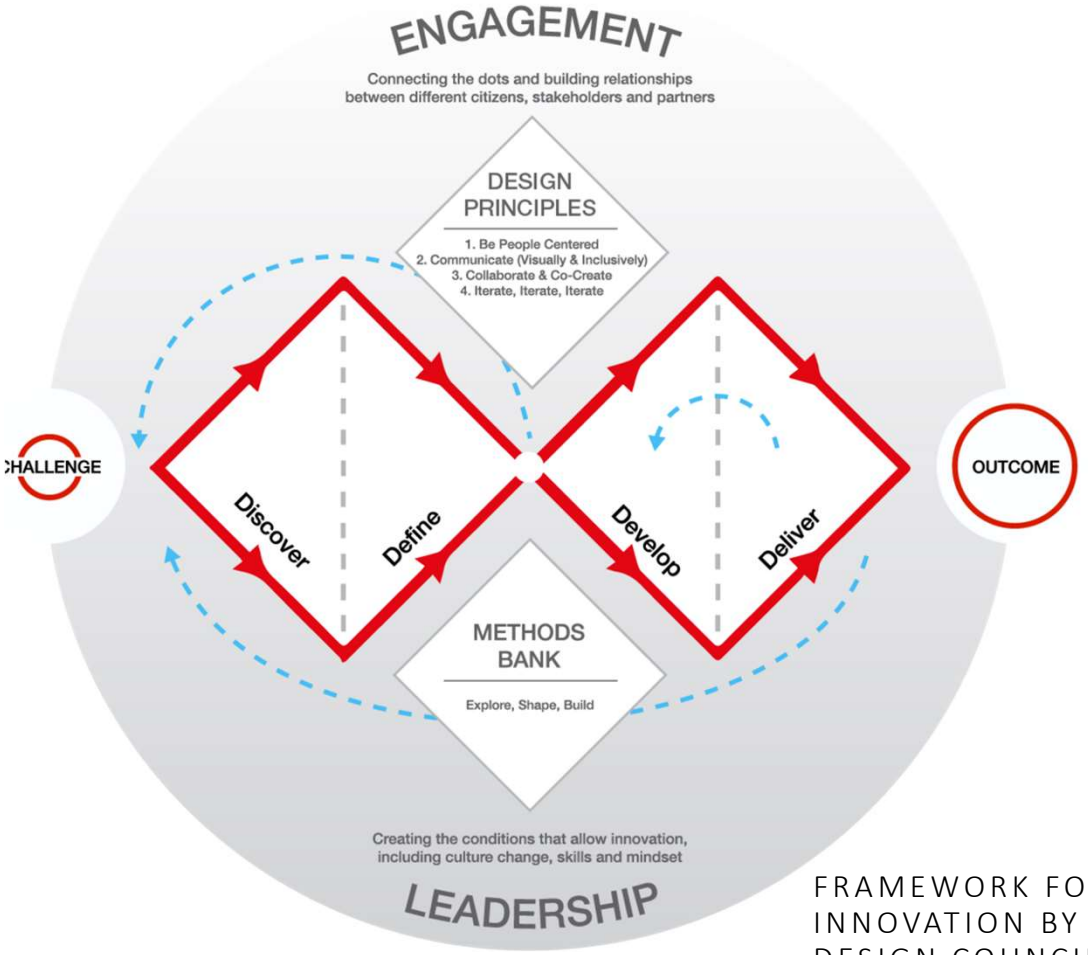

Input
Environment
Role 1
Role 2
Role 3
Action 1
Action 2
Action 3
Action 4
Action 5
Action 6
Flow of Messages
Watches for Messages caused by

The Challenge of Codebase Familiarisation

```python
async def handle(self, message: Message, environment):
    """
    管理员处理信息，现在简单的将信息递交给下一个人
    The administrator processes the information, now simply passes the information on to the next person
    :param message:
    :param environment:
    :return:
    """
    # Get all roles from the environment
    roles = environment.get_roles()
    # logger.debug(f"{roles=}, {message=}")

    # Build a context for the LLM to understand the situation
    # context = {
    #     "message": str(message),
    #     "roles": {role.name: role.get_info() for role in roles},
    # }
    # Ask the LLM to decide which role should handle the message
    # chosen_role_name = self.llm.ask(self.prompt_template.format(context))

    # FIXME: 现在通过简单的字典决定流向，但之后还是应该有思考过程
    #The direction of flow is now determined by a simple dictionary, but there should still be a thought process afterwards
    next_role_profile = self.role_directions[message.role]
    # logger.debug(f"{next_role_profile}")
    for _, role in roles.items():
        if next_role_profile == role.profile:
            next_role = role
            break
```

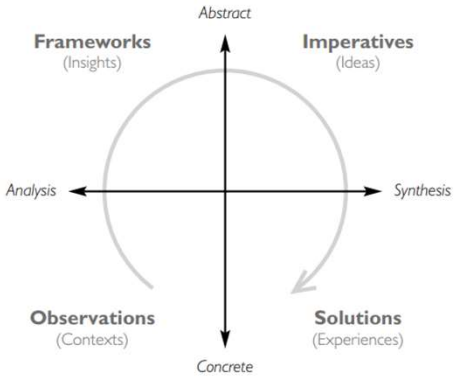


FRAMEWORK FOR INNOVATION BY THE DESIGN COUNCIL (UK)

The Fuzzy Front-End

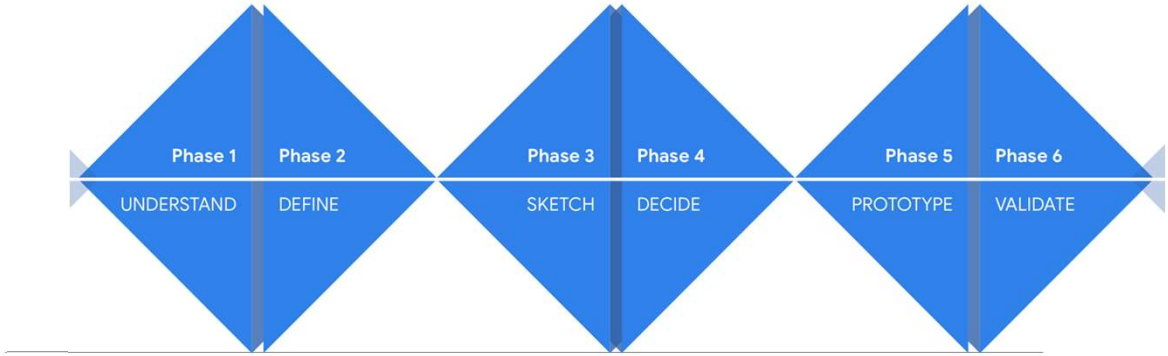
Review of Existing FFE Frameworks

FIGURE 3. The Innovation Process



Source: Words in parentheses are Owen's. Charles Owen, "Design Research: Building the Knowledge Base," *Design Processes Newsletter*, 5/6 (1993) and Charles Owen, "Design, Advanced Planning and Product Development," 3º Congresso Brasileiro de Pesquisa e Desenvolvimento em Design, Rio de Janeiro, Brazil (October 26, 1998) and International Symposium: Nuevos Metodos y Tecnologias para el Diseño de Productos, Santiago, Chile (November 12, 1998).

Learning Model for Innovation Beckman and Barry (2007)

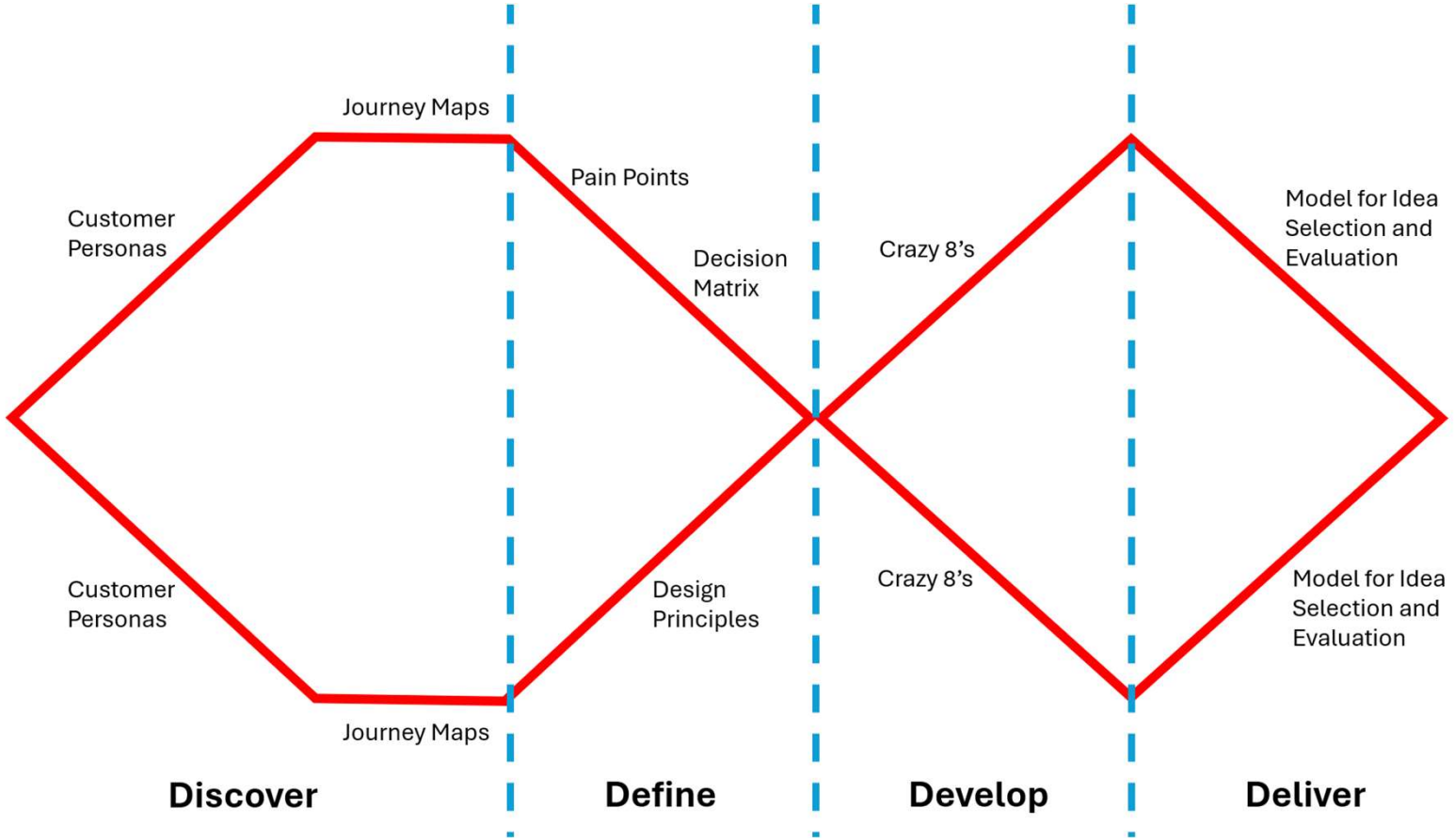


Google Design Sprint Kit

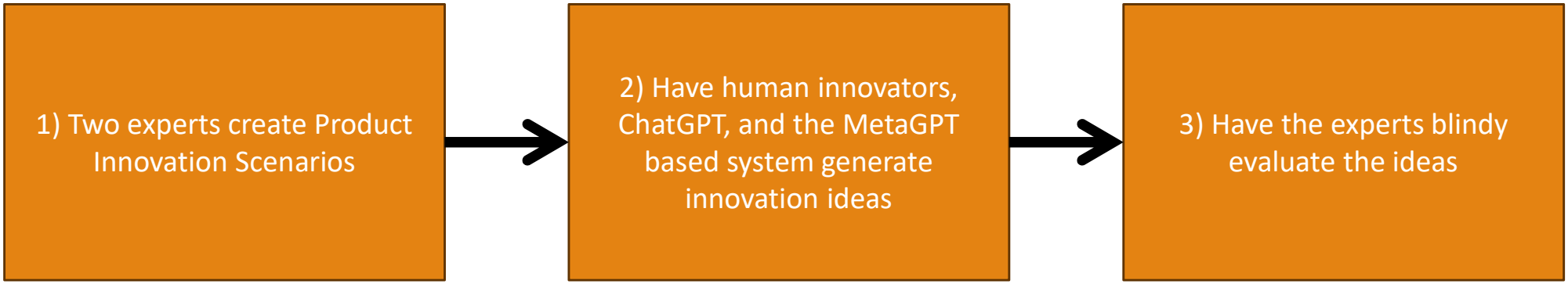
Framework for Innovation Stages	Learning Model Stages (and Associated Learning Type	Google Design Sprint Stages	Learning Model Methods	Google Design Sprint Kit Methods
Discover	Observations (Diverging)	Understand	Participant Observation, Non-participant Observation, Formal Ethnographic interviews, Intercepts, Informant Diaries, Virtual Ethnography and Netnography	User Journey Mapping, Experience Mapping, Importance/Difficulty Mapping, Rose Thorn Bud, Job Stories
	Frameworks (Assimilating)		User Stories, Two-by-Two User Matrices, User Timelines	
Define	Imperatives	Define	Extracted from Frameworks: Needs, Design Principles	Success Metrics and Signals, Design Principles, The Golden Path, Pick a Target, Assumptions Mapping
Develop	Solutions (Accommodating)	Sketch	Solution Generation: Morphological Analysis, Brainstorming.	Crazy 8's
Deliver		Decide	Solution Selection: Decision Matrices	Decision Matrix, Silent Review and Vote, Assumptions and Sprint Questions

Table 2.3: *A compilation of the Stages, Associated Learning Styles, and Methods found in the three reviewed FFE frameworks.*

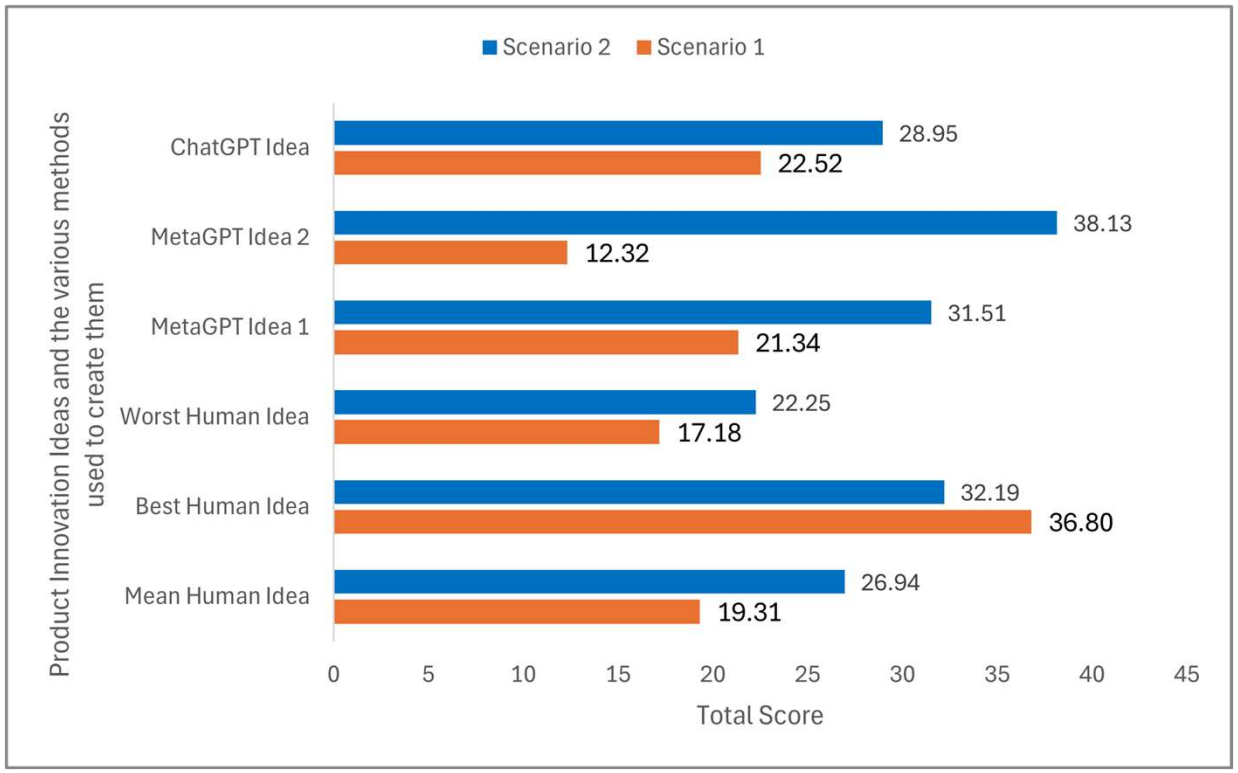
Designing a Standard Operating Procedure for the Fuzzy Front End



Evaluation

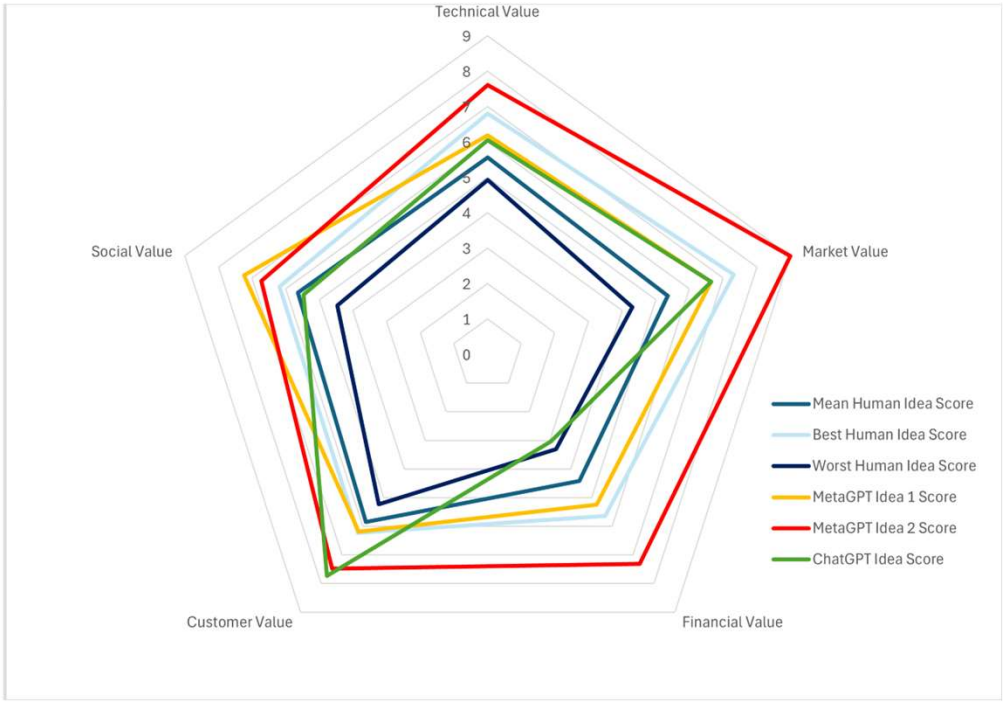

1) Two experts create Product Innovation Scenarios
2) Have human innovators, ChatGPT, and the MetaGPT based system generate innovation ideas
3) Have the experts blindy evaluate the ideas

Results


Scenario 2
Scenario 1
Product Innovation Ideas and the various methods used to create them
ChatGPT Idea
28.95
22.52
MetaGPT Idea 2
38.13
12.32
MetaGPT Idea 1
31.51
21.34
Worst Human Idea
22.25
17.18
Best Human Idea
32.19
36.80
Mean Human Idea
26.94
19.31
0
5
10
15
20
25
30
35
40
45
Total Score

Scenario 1

Scenario 2



Thank you for listening!