Lab 5: from a grounded idea to a described one that says what is new

IPGURU

PART 5, DEFINE · CLASSES 13 AND 14 · 60 TO 90 MINUTES · YOUR OWN IDEA

0 to 10 **Put the mechanism, the features and the parameters into typed fields.** A typed field is a field with a category on it: this line is a mechanism, that one a parameter. Take the concept as it stands after Part 4 and move it line by line into four categories: the mechanism that makes it work, the features it has, the parameters those features run at, and the results it produces. Do not write around a field you cannot fill. Leave it empty, because an empty field is the point.

In IPGuru: The Invention record: mechanism, distinguishing features, supporting detail, entered as typed fields against the idea.

10 to 20 **Add the actors, the sequence and the limitations.** Who does something, in what order, and what the thing cannot do. Write the sequence as numbered steps with the actor named on each one, including the steps where the actor is the object itself. Then write the limitations you already know, because a limitation you write is a boundary and the same limitation found later is a surprise.

In IPGuru: The Invention record: actors, sequence and limitations on the typed entities, with support sources attached where they exist.

20 to 30 **Write the physical description: materials, dimensions, assembly, conditions.** Materials named with the property you rely on and the range it has to stay inside. Only the dimensions that change whether it works, with their tolerances. How the parts are held and in what order they go together. The conditions it needs: temperature, load, power, who is present, how long. A suitable material is a gap wearing a coat.

In IPGuru: Studio: the structured physical description (form, components, attachments, materials and finish, operating states, setup and teardown, dimensions, exclusions), saved as a version.

30 to 42 **Write the two lists: proposed forms and use cases.** An embodiment, or proposed form, is one form the invention could take, built or not, and each entry says which. A use case is one run of it by a person. Write at least two of each, in the same field categories you used in the first two steps. Watch for a field that one entry fills and another leaves empty, because that is almost always a parameter nobody has ever decided.

In IPGuru: The Invention record: typed embodiments and use cases, each with its own mechanism, feature, parameter, actor, sequence, result and limitation fields.

42 to 55 **Write three variations, then turn every gap into a dated decision.** Another material, another size, another setting, each with the property or the range that makes it work. Writing the supported alternatives is how you say what

can vary and what has to stay the same. Then go back through everything and list every place you could not answer. Each one gets a person and a date.

In IPGuru: Documents: variations and embodiments, and physical and usage description, generated and then corrected by hand; the gaps entered in the Register as open decisions.

55 to 70 **Write the three statements against the closest thing, and name the element.** New: what is in yours that was not in the closest thing you named in Lab 4. Unique: the one difference a stranger could check by looking at both. Non-obvious: why somebody skilled in the field would not simply have done this, written from your tensions and the branch you rejected, and marked as an argument. Then name the single element it would not work without.

In IPGuru: The design rationale on the Design tab read back, and the three statements plus the element recorded against the idea.

70 to 78 **Look for the five kinds of evidence, and write down what you found.** Long-felt need, failure of others, unexpected results, teaching away, scepticism of the skilled. For each one, either the evidence with its source, or the words not found and where you looked. An absence written down stops the next person repeating your search.

In IPGuru: Prior-art research and knowledge: search for each of the five and save what comes back, including the runs that return nothing.

78 to 90 **Fill one canvas, and plan the market conversation.** Choose the one canvas that fits your leading destination and fill it, marking every box stated or backed and naming the boxes you left empty. Add the second canvas only if it answers a question the first cannot. Then plan the conversation: who you will show the sheet to, what you will show them, and what you will ask about what they did last time.

In IPGuru: The canvas boxes marked in the Register, and the four-view product sheet prepared from Studio for the conversation.

optional, [illegible] **Show the sheet to a real person.** This step is fieldwork and is not done in the session. One real person: a user, a buyer, somebody who would install or maintain it, or somebody who could block it. Show the sheet, ask what they did last time, and stop talking. What it adds: the conversation tests whether the difference is understood and what it is worth to that person, which no box on the canvas can tell you. How to record it: who, when, their first reaction and their first objection in their words, and which box it moved. A reaction that confirms what you wrote is a result, and so is an approach that gets no reply. Nothing invented, and no reaction from anybody you have not actually shown it to.

In IPGuru: The four-view product sheet shown from Studio, with the reaction and the objection entered in the Register against the boxes they move.

MECHANISM, FEATURES, PARAMETERS, RESULTS the four field types, filled or visibly empty

ACTORS, SEQUENCE, LIMITATIONS numbered steps with a name on each one

MATERIALS, WITH THE PROPERTY AND THE RANGE not a suitable material

DIMENSIONS THAT MATTER, WITH TOLERANCES and the ones you left out on purpose

ASSEMBLY AND CONDITIONS how it is held, in what order, and what it needs to work

PROPOSED FORMS (EMBODIMENTS) at least two, each marked built or not built

USE CASES at least two runs by a person, each in the same seven categories

THREE VARIATIONS another material, another size, another setting, and what has to stay the same

THE OPEN DECISIONS each with a person and a date, not an intention

NEW what is in yours that was not in the closest thing

UNIQUE the one difference a stranger could check

NON-OBVIOUS why a skilled person would not simply have done this

THE ELEMENT THAT CARRIES THE ADVANCE the one piece it would not work without

THE FIVE CONSIDERATIONS LOOKED FOR evidence with its source, or not found and where you looked

THE CANVAS, BOX BY BOX one canvas, every box marked stated or backed, and the empty ones named

THE CONVERSATION PLANNED who, what you will show them, and what you will ask about last time

OPTIONAL, OUTSIDE THE SESSION: WHO YOU SHOWED IT TO real people only, named by role, with the date

OPTIONAL, OUTSIDE THE SESSION: FIRST REACTION AND FIRST OBJECTION in their words, not yours, including no reply

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Artefact: the enabling description and the novelty statement. Seven field categories filled or visibly empty, the physical description with materials, dimensions, assembly and conditions, two proposed forms and two use cases, three variations, every gap turned into a dated decision, three statements against the closest thing you named in Lab 4, the element that carries the advance, the five considerations with their evidence or their absence, one canvas with every box marked, and the market conversation planned. The last step is fieldwork, is optional, and is done outside the session. The platform keeps the record; export the physical and usage description, the variations and embodiments document and the product sheet at the end and attach them to this sheet. Nothing here is a search, a clearance or legal advice, and no reaction is written down that a real person did not give.

Form B · any assistant

the sheet and whatever assistant you already use

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ANY ASSISTANT

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0 to 10 **Put the mechanism, the features and the parameters into typed fields.** A typed field is a field with a category on it: this line is a mechanism, that one a parameter. Take the concept as it stands after Part 4 and move it line by line into four categories: the mechanism that makes it work, the features it has, the parameters those features run at, and the results it produces. Do not write around a field you cannot fill. Leave it empty, because an empty field is the point.

Prompt: "Sort my concept into four lists: mechanism, features, the parameters each feature runs at, and results. Leave anything you cannot source from my text out." You mark every field that came back empty.

10 to 20 **Add the actors, the sequence and the limitations.** Who does something, in what order, and what the thing cannot do. Write the sequence as numbered steps with the actor named on each one, including the steps where the actor is the object itself. Then write the limitations you already know, because a limitation you write is a boundary and the same limitation found later is a surprise.

Prompt: On paper: three headings, actors, sequence, limitations. Number the sequence and put a name against every step.

20 to 30 **Write the physical description: materials, dimensions, assembly, conditions.** Materials named with the property you rely on and the range it has to stay inside. Only the dimensions that change whether it works, with their tolerances. How the parts are held and in what order they go together. The conditions it needs: temperature, load, power, who is present, how long. A suitable material is a gap wearing a coat.

Prompt: "Ask me one question at a time about materials, dimensions, assembly and conditions, and stop when I say I do not know." You write down every stop.

30 to 42 **Write the two lists: proposed forms and use cases.** An embodiment, or proposed form, is one form the invention could take, built or not, and each entry says which. A use case is one run of it by a person. Write at least two of each, in the same field categories you used in the first two steps. Watch for a field that one entry fills and another leaves empty, because that is almost always a parameter nobody has ever decided.

Prompt: On paper: one row per proposed form and per use case, the same seven columns across the top, and the empty cells left visibly empty.

42 to 55 **Write three variations, then turn every gap into a dated decision.** Another material, another size, another setting, each with the property or the range that makes it work. Writing the supported alternatives is how you say what

can vary and what has to stay the same. Then go back through everything and list every place you could not answer. Each one gets a person and a date.

Prompt: "From this description, list every place a maker would have to ask me a question." You decide which are decisions and put a name and a date on each.

55 to 70 **Write the three statements against the closest thing, and name the element.** New: what is in yours that was not in the closest thing you named in Lab 4. Unique: the one difference a stranger could check by looking at both. Non-obvious: why somebody skilled in the field would not simply have done this, written from your tensions and the branch you rejected, and marked as an argument. Then name the single element it would not work without.

Prompt: "Here is the closest thing and here is mine. Ask me the questions a sceptic would ask about each of my three statements." You write the statements yourself, in your own words.

70 to 78 **Look for the five kinds of evidence, and write down what you found.** Long-felt need, failure of others, unexpected results, teaching away, scepticism of the skilled. For each one, either the evidence with its source, or the words not found and where you looked. An absence written down stops the next person repeating your search.

Prompt: On paper: five rows, each with evidence and source, or not found and where you looked.

78 to 90 **Fill one canvas, and plan the market conversation.** Choose the one canvas that fits your leading destination and fill it, marking every box stated or backed and naming the boxes you left empty. Add the second canvas only if it answers a question the first cannot. Then plan the conversation: who you will show the sheet to, what you will show them, and what you will ask about what they did last time.

Prompt: "Given my destination, which canvas boxes apply, and what would count as backing for each?" You choose the canvas and write the questions.

optional, [illegible] **Show the sheet to a real person.** This step is fieldwork and is not done in the session. One real person: a user, a buyer, somebody who would install or maintain it, or somebody who could block it. Show the sheet, ask what they did last time, and stop talking. What it adds: the conversation tests whether the difference is understood and what it is worth to that person, which no box on the canvas can tell you. How to record it: who, when, their first reaction and their first objection in their words, and which box it moved. A reaction that confirms what you wrote is a result, and so is an approach that gets no reply. Nothing invented, and no reaction from anybody you have not actually shown it to.

Prompt: On paper: name the person and the date, write the two lines you would send to ask for twenty minutes, and leave room for their words.

MECHANISM, FEATURES, PARAMETERS, RESULTS the four field types, filled or visibly empty

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