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COBRA+: A SYSTEMATIC (SERVICE) INNOVATION PROCESS

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Abstract

Every service innovation problem is inherently complex. Service is about people. And inherently, therefore, needs to address intangible ‘emotion’ issues. Solving complex people-related problems necessitates getting the problem back to a first principles level. The overall TRIZ, Systematic Innovation and TrenDNA processes are intended to help problem solvers do exactly that. The downside of both processes is they demand a certain learning overhead. An overhead that circumstances may mean is unacceptable. The COBRA+ process is intended to fill the gap. It too ensures problem solvers tackle the issues they’re trying to address back at the first principles level.

Keywords: *TrenDNA, Human-Centred-Design, Emotional-Design*

Аннотация

Любая проблема инноваций услуг является весьма сложной, поскольку услуги затрагивают непосредственно людей. И в своей сути, услуги обязаны учитывать нематериальные вопросы, касающихся человеческих эмоций. Решение сложных проблем, относящихся непосредственно к людям, требует приведения проблем на уровень «первых принципов». Процессы в ТРИЗ, Системных Инновациях и TrenDNA разрабатываются именно для того, чтобы помочь решателю проблем достичь этой цели. Недостатком данных процессов является необходимость длительного обучения, что зачастую не является возможным. Процесс, разработанный в COBRA+ предназначен устранить этот недостаток и помочь решателю обеспечить решение проблем на уровне первых принципов.

Ключевые слова: *TrenDNA, проектирование для человека, эмоциональное проектирование*

1.0 Introduction

When it comes to dealing with complex adaptive systems, humans are for the most part ‘winging it’. This is especially true when it comes to attempts to innovate within complex environments. The tools and methods available to prospective innovators – with TRIZ sitting at their apex – are largely built around an understanding of the world that makes various assumptions that, while they might be true in a controlled, complicated environment, are largely inappropriate in a complex one. In a complicated problem, there is the possibility of a ‘right’ answer. There is also the prospect of a clear ‘optimum’ solution, and that this solution can be calculated using some form of algorithm. Neither of these assumptions are appropriate

in a complex environment. In a complex environment, there are many potential solutions, the ‘best’ one of which, is highly likely to be transitory, and the methods by which an ‘optimal’ solution might be calculated are likely also to be transitory in nature. In a complicated environment, there is an implicit assumption that problem solving work will eventually deliver a stable end result that requires no further attention. In a complex environment, this ethos can only lead to death. Stability is a meaningless goal. And as such the only way to maximise the likelihood of a sustainable future is to establish processes and protocols that enable constant learning and change. The entities that are able to learn fastest are the ones that are likely to survive the longest. Fortunately, as heard in the story of two men being chased by a bear, the necessary learning rate need only be better than your competition. We don’t have to run fast than the bear, we have to run faster than the other person. We need a learning process that enables us to learn faster than others. Which in turn means able, as described in the companion paper to this one¹, to Observe-Orient-Decide-Act faster. COBRA+ is such a cyclical process. One that has been built with the specific goal of helping innovators designing innovative solutions for people in a service context. Figure 1 describes the basic steps of the process:

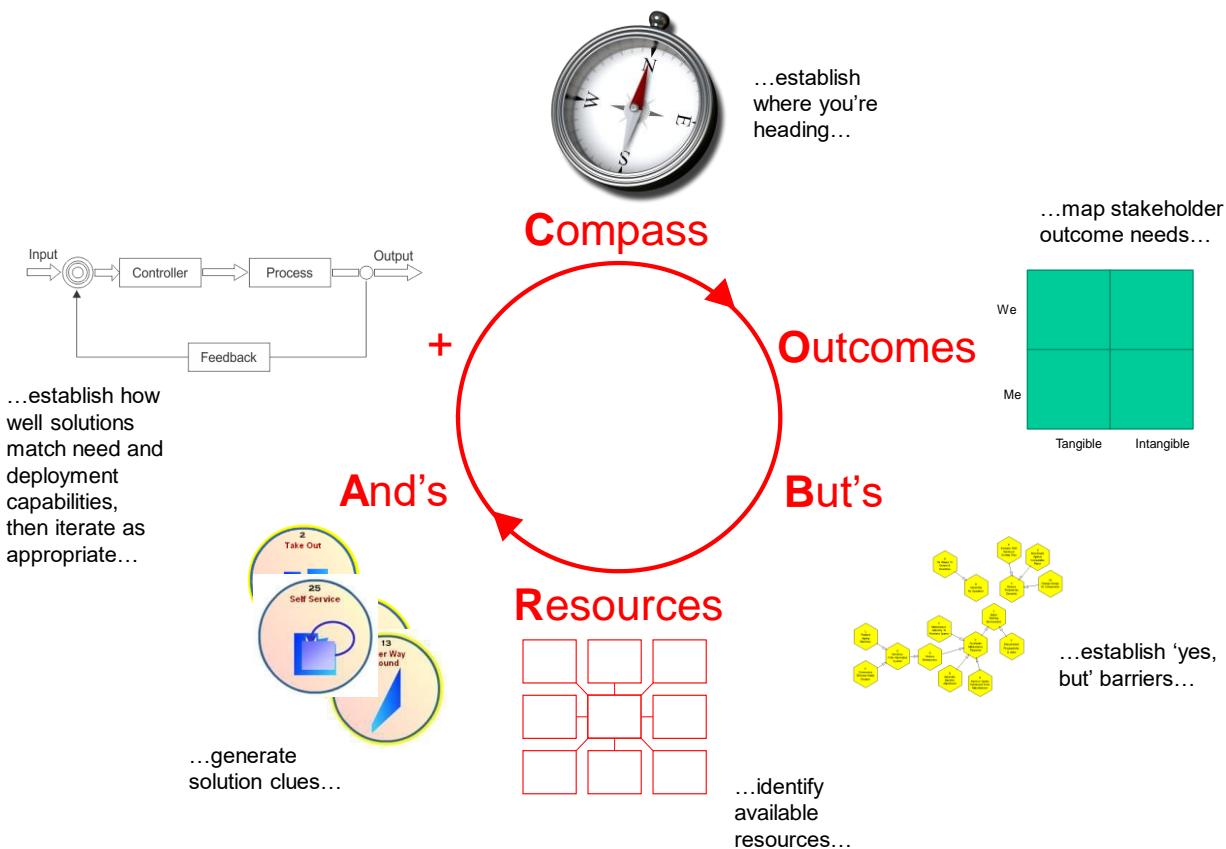


Figure 1: COBRA+ Overall Process

The process is also template-based in order to swiftly enable problem solvers to work through a logical complexity-embracing sequence of steps without a long learning curve. The overall process forms a cycle, and as such, allows a problem solver to undertake as many iterations as might be necessary to achieve an ‘appropriate’ solution. The test for what might be classed as ‘appropriate’ is contained within the process.

2.0 The COBRA+ Process Stages

A first iteration around the COBRA+ cycle typically begins with C for Compass.

Compass is all about making sure we know where we're heading. Irrespective of where we think we should be heading, TRIZ tells us that all successful solutions head towards an 'Ideal' end state in which all the intended stakeholders receive all the outcomes they're looking to achieve with no negative consequences. Put into lay-person terms, every system evolves to a 'free, perfect and now' evolutionary end point. As may be expected, this end point is more theoretical than practical. From a practical perspective it will typically entail solutions that deliver useful functions 'by themselves': the ideal software updates itself; the ideal team manages itself; the ideal advertisement targets itself, and so on. The usual manner of interpreting the Compass part of COBRA+ is to encourage problem solvers to think about two 'ideal's: one the ultimate 'ideal' solution, and then the other the pragmatic 'ideal' we wish to achieve in the current scenario.

Next up comes O. O is for Outcomes. When we're discussing situations involving humans and we're thinking about 'outcomes', we need to consider both tangible and intangible sides of the story. If we're smart we should also think about what each of the different stakeholders present within a situation are looking to achieve, and what the people around those stakeholders are trying to achieve. Then, as if we're not already making life difficult for ourselves as problem solvers, we also need to consider how those outcome needs alter at different stages of the story. The Fast-Moving-Consumer-Goods sector spends a lot of time thinking about 'Moments of Truth', critical moments when, in their case, consumers make decisions about the products being sold to them. In their world, there are basically two Moments of Truth – number one, did the consumer select their product off the supermarket shelf, and number two, when they got the product home and used it, did it work? In other industries, the number and type of Moments of Truth is likely to be rather more complex. The COBRA+ outcome-mapping job, if we're to do it right, requires us to identify the tangible and intangible outcome needs of each of the stakeholders at each of the Moments of Truth. Taken to the first principles level, the job is easy, and we simply fill out this template:

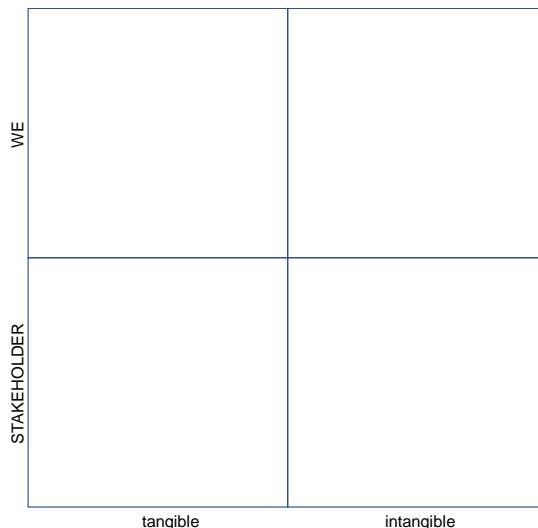


Figure 2: Outcome Map

The time-consuming part is creating one of these tables for each stakeholder at each Moment of Truth. So that we end up with something like the image reproduced in Figure 3.



Figure 3: Outcome Landscape

Next up comes B for ‘But’. Here’s the part of the process where we deliberately force ourselves to run towards the things that will prevent us from achieving all the things we’ve identified we wish to achieve in the previous C and O stages of the process. ‘But’ is a short-cut for ‘yes, But’. Or we could call it ‘Barriers’. It’s about identifying all of the things that we perceive might prevent us from achieving a successful solution. Here’s the first part of the COBRA+ process where we explicitly start to think about complexity and complex adaptive systems. Normally (i.e. if we hadn’t accepted our business challenge was a complex one) we would be encouraged to go and find the ‘root cause’ of our problem.

Once we accept that a situation is complex, we have to accept that there is no such thing as a root-cause. The links between cause and effect in a complex system are often remote and inter-connected. The strong likelihood is that the outcomes our system currently delivers are emergent and that what they emerge from is a ‘conspiracy of causes’. Once we’ve identified each of the ‘yes, but’s’ preventing us from achieving the outcomes we want (versus the ones we might currently be getting), the heart of the ‘B’ stage of COBRA+ involves us mapping the relationships between each of the ‘yes, but’ statements we’ve been able to identify. Here’s another important feature of complex systems: it’s not so much the things that determine the behaviour of the system as it is the relationships *between* the things. The way the process works here is we map the ‘between’ by asking the question ‘which of the other ‘yes, but’ perception statements does this one lead to?’ We need to answer this question for each of the ‘yes, but’ perceptions we’ve been able to list. Then we can draw a map of what we’ve done. The map should end up looking something like this:

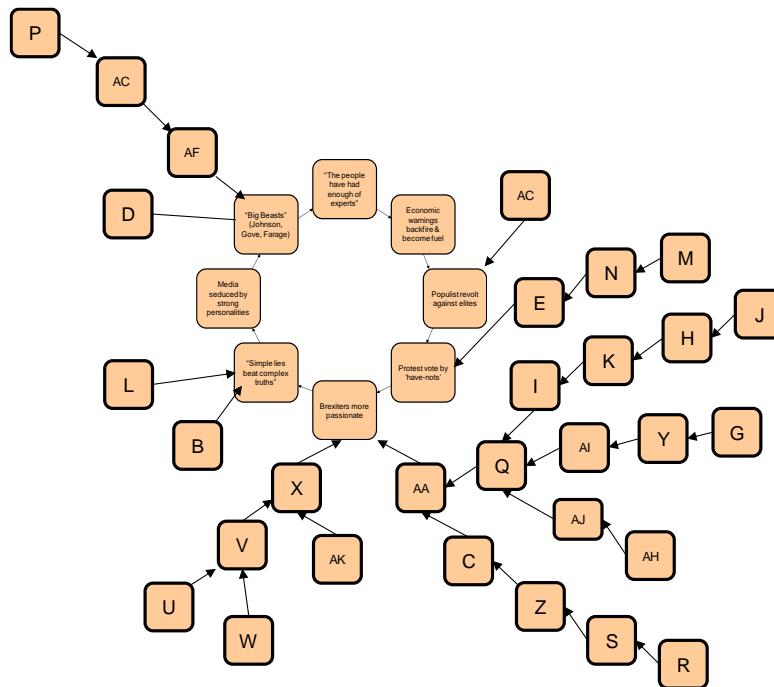


Figure 4: Typical Perception Map

...which can appear a little intimidating at first (although this particular map is for a somewhat more complex problem than most). What will inevitably appear, however, is at least one loop. And because the map has been constructed based on a list of ‘yes, but’ statements, those loops (actually only one in this example – in other situations, there may be more) will define the vicious cycle (or cycles) that are preventing us from achieving our desired outcomes. At this point we have found something important: the critical part or parts of the ‘conspiracy of causes’ that will prevent us from getting to where we need to be. Actually, we’ve also identified something else that may turn out to be important. Looking at the above map, notice the box ‘Q’ which has multiple arrows pointing to it. This is what we call a ‘Collector’. It is one of the important things ‘driving’ the vicious cycle. If we combine the idea of loops and collectors, we can also notice that the boxes labelled ‘simple truths beat complex lies’, ‘Brexiters more passionate’ and ‘Big Beasts’ are not only in the vicious cycle loop, but they’re also Collectors. This is trying to tell us that, as we transition from problem definition to solution generation, these are the most important areas for us to focus our attention on. In a complex situation, everything is, of course, connected to everything else, but nevertheless, when we’re looking to change the system (hopefully for the better), we need to start somewhere. This ‘yes, but’ map is designed to navigate us to those places.

We still haven’t solved anything at this stage in the process, but we do now know what the important problems are, so we can begin the transition to solution. This brings us to the R part of COBRA+. R stands for Resources. The job in this part of the process, then, is to make a search for anything (knowledge, things, processes, people, measures, etc) that is either in or around our current system that we might be able to bring to bear to help us to improve the system. In theory, this is the simplest part of the process. In practice it can often require us to do some deep thinking about what we already have that we might not recognise we have. The best heuristic to keep in mind when making this search for Resources is that any time we allow ourselves to add something new to a system, we’ve just made it worse. In that we’ve

taken it further away from the ‘Ideal’ we identified in the C-stage of COBRA+. Here’s another heuristic: 99 times out of a hundred, the resources needed to solve the problem are already there in or around our system, they just haven’t been recognised as resources. Or – important point – they have been things that we’ve viewed as harmful things rather than things that will help us to get to where we want to be. Lack of money, competitors and the person that arrives at meetings apparently intent on disrupting everyone are all things that are easily classifiable as negative things, but as far as our search for Resources is concerned, they’re also likely to be some of the best opportunities we will have to solve our problem.

Now we arrive at A for ‘And’. This is the part of COBRA+ where we do all of the heavy-lifting in terms of solution generation. There are numerous way to do this idea generation job. The simplest, now the C, O and, particularly, B stages have told us where we’re trying to get to and what’s stopping us, is to simply brainstorm solution ideas. The next simplest is to look to the world of TRIZ and this book and make use of the 40 Inventive Principles. The most effective way is to make use of the Business Matrix since it will allow us to prioritise which of the 40 Principles to use. The ‘And’ process, therefore, makes use of the Conflict Abstraction Template (CAT) – Figure 5. The way we start the job of using this template is to equate the ‘thing we’re trying to improve’ box at the top left of the picture to our Compass ‘ideally’ statement. And the thing stopping us are the most important of the ‘yes, but’ perceptions as defined by the ‘yes, but’ map from the ‘B’ stage of the process. Once we’ve translated this ‘specific problem’ into the generic improving and worsening parameters offered down the sides and across the top of the Matrix, we can start looking up the relevant Inventive Principles at the intersections between the relevant rows and columns. Then, when we have these Principles, we can begin generating a list of ‘And’ solution clues. In true TRIZ (and Design Thinking ‘divergence’) fashion, our target here is to generate as many solution clues as possible.

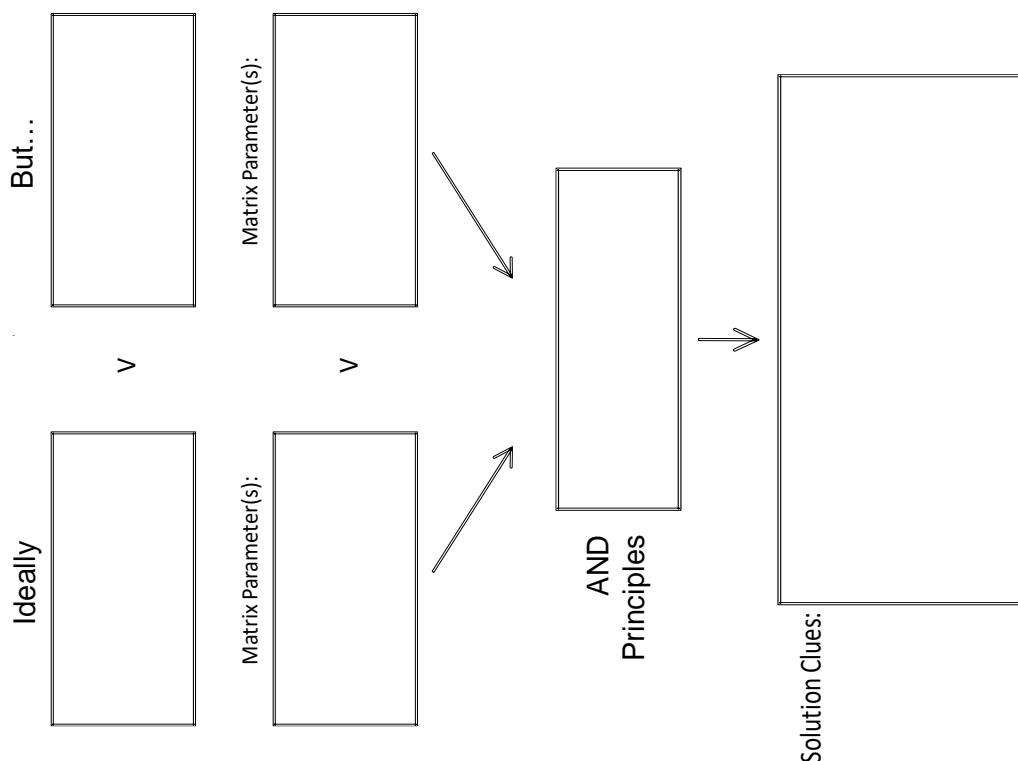


Figure 5: Conflict Abstract Template (CAT)

The SI team in-house heuristic is ‘divege until it hurts’. As a minimum, we force ourselves to generate at least five clues from each of the offered Inventive Principles. If we’re feeling particularly motivated, the five will become ten. Or twenty. There’s rarely a downside to generating ‘too many’ ideas. Forcing ourselves to generate lots of ideas forces us to put aside consideration of the quality of those ideas and to get ‘out of the box’ and start thinking about more radical solution directions. The ultimate idea being that, once we start the process of converging on the solutions we might actually consider taking forwards, we will be looking at combinations of the solution clues we’ve generated. A radical clue on its own is rarely going to give us a ‘silver bullet’ solution, but a radical clue in combination with some of the other clues, is very likely to give us the breakthrough we’re looking for. The ‘And’ process is largely a divergent one, but after we’ve ‘diverged ‘til it hurt’, there’s a need to start doing the convergent job of identifying the solution clues (and combinations thereof) that will give us a first insight into how we’re going to solve our problem.

This, finally, takes us to the ‘+’ stage of COBRA+. This is the place we close the loop back to the initial Compass heading we defined. It is all about examining the appropriateness of the insights and solutions that have emerged from the ‘And’ solution generation stage. ‘+’ is all about the comparison of where we trying to get to versus where our new solution has got us. It’s the place where we decide whether we need to go through the whole COBRA process another time, or whether the solutions we have are ‘good enough’. There are a number of criteria that ‘+’ expects problem solvers to examine in order to make the decision about whether we’re finished or whether we need to do more work. The typical ‘+’ questions are:

- | | |
|---|--------------------------|
| Is the solution good enough? | <input type="checkbox"/> |
| Do all the stakeholders perceive a win? | <input type="checkbox"/> |
| Do we possess a critical mass of resources to successfully execute the solution? | <input type="checkbox"/> |
| Do we possess the requisite level of capability to successfully execute the solution? | <input type="checkbox"/> |
| Do we possess the requisite will, stamina and persistence? | <input type="checkbox"/> |

Figure 6: Typical ‘+’ Stage Loop-Closing Questions

If the answer to any of them is ‘no’, then we really ought to go back to ‘C’ and conduct another iteration, either refining our initial Compass heading, or re-defining the problem in terms of where we are experiencing our ‘no’. A likely scenario for example, is that we enter the ‘+’ stage of the process with a solution that we think is the best thing we’ve ever dreamed up in our lives, but, unfortunately, when we are forced to think about the question, ‘do we possess a critical mass of resources to successfully execute the solution?’ we realise we do not. Now the new problem is either a new Compass heading that focuses on how we might acquire that critical mass of resources, or how we rethink our beautiful solution such that it is achievable with our existing resources.

If we’re operating in true Design Thinking mode, there is no limit to how many times we might find ourselves looping around this COBRA+ process. In reality, what we’re doing is very brain-intensive and therefore energy-sapping. The heuristic in the SI team when we’re working on real problems is ‘go around the loop once and get a ‘good’ solution; force yourself to go around a second time and you get a ‘great’ solution’. Ultimately, it all depends

on how much time and energy you have, recognising too, that in a complex environment, you can't 'know' what the right solution is until you've tested it with your full spectrum of stakeholders. And, again in Design-Thinking and 'minimum viable demonstration' modes, you're looking to do that as soon as you possibly can. I.e. the stakeholders are the ultimate arbiters of the first '+' question of 'is the solution good enough?' and they can only meaningfully answer that question when we've given them something to play with.

As with many things in life, it is often easier to grasp a process by seeing a tangible example rather than by reading abstract theory. The first place you'll find that is in the Business Matrix 3.0 book², where COBRA+ plays quite a big role in the context of complex business problems.

References

1. Mann, D.L., '(Systematic) Innovation In Complex Environments', Proceedings of the TRIZ Developers Summit 2019. June 13-15, Minsk, Belarus.
2. Mann, D.L., 'Business Matrix 3.0', IFR Press, 2018.

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