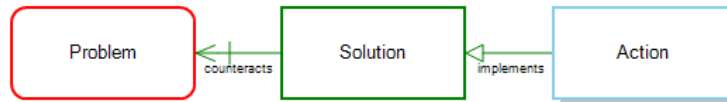


Red, Green, and Blue - Situational improvement Using Southbeach

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Your “team” does not report to you. You have no direct control over what anyone is doing day to day. You know where ¹your organization needs to go, but does anyone else see it the same way? Think quickly. Time is running out. Your manager and your client are expecting results. “If only everyone could buy into my plan” is not a solution. Stakeholders in the game have their own resources, plans, and objectives. Everyone seems to be going in different directions. Can you pull it together?

We can all draw pictures, yet process models, architecture diagrams, and organization maps only describe the world as it is, or as it should be. How to get from “here” to “there”?

Do you need a better way to bring your team to the table, get them focused on an important problem or challenge and then aligned on the changes to come? Would it be helpful to have a visual technique for problem solving and for change management that everyone from any discipline could understand and act on without losing important details?

A “situation” is a perspective on something that must be improved or changed. Examples include a process not meeting the needs of the business, an organizational tangle that must be unpicked and re-aligned, and a set of policies that are driving the wrong behavior.

Improving a situation means gaining the agreement of stakeholders on how to increase the useful elements in the business and decrease the harmful elements, as perceived by them. Progress can be made if the team can recognize that everything is both useful and harmful.

This paper explains how Southbeach Diagrams can be used to work through such “wicked” projects. The approach appeals to creative consultants, business analysts, program managers, and change specialists in any industry.

Applicable also to science, engineering, horizon scanning, and public policy, this article focuses mostly on business consulting. It is based on emerging practices among Southbeach users who work in management consulting.

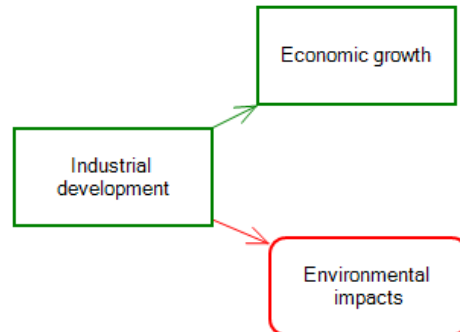
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Table of Contents

Red and Green.....	3
Easy to learn.....	5
More than just a diagram.....	6
The Southbeach workshop.....	6
Case Study – IT Systems Transformation	7
Aligning the team – Role of the Consultant.....	8
Case 1 – Same words / Different things.....	9
Case 2 – Same words / Same thing.....	9
Case 3 – Different Words / Same Thing.....	11
Differences of opinion are useful.....	12
Keep moving forward.....	13
Your Creativity	15
Contradictions are everywhere.....	16
Where to start?.....	19
Example 1: Pros and Cons decomposition.....	19
Example 2: Root cause chain	19
Example 3: Goal achievement and barriers diagram.....	20
Structuring the work.....	20
Blue – Making a difference.....	21
Appendix A: Software for Southbeach.....	26
Appendix B: Southbeach Notation Specification.....	26

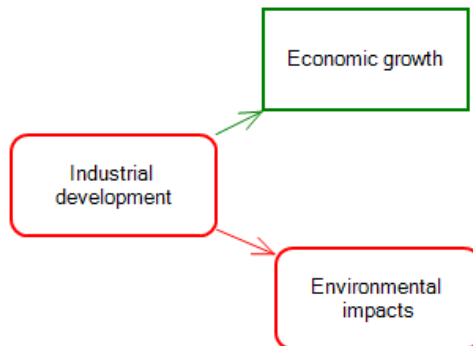
Red and Green

Everything in the world is both useful and harmful. There are pros and cons in anything we choose to change. There is always an upside and always a downside. Glasses are half empty and half full. There are two ways to look at anything. Yin Yang. In Southbeach, these are called perspectives. They are represented by red and green blocks. Take this example:

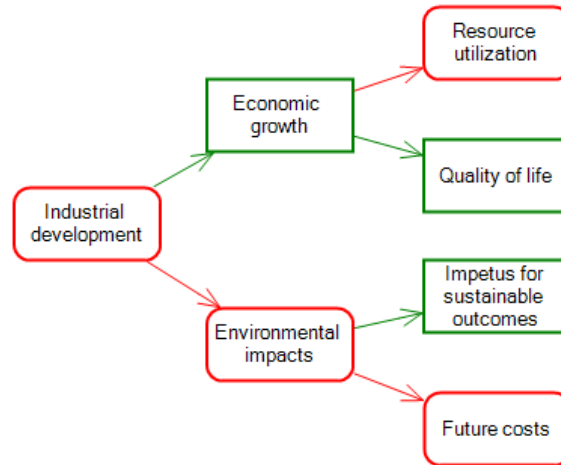


In the model, “industrial development” has been decomposed into two elements, one useful, the other harmful. While a realistic model would contain many more blocks, the principle would be the same. The situation shown is a contradiction. Increasing industrial development may generate more economic growth, but it also increases the environmental impacts.

Southbeach models do not claim to represent a single “truth” and are rarely drawn from a “world” view. The model above was drawn by an industrialist. The perspective is that industrial development is useful. The same model from the perspective of an environmentalist would be



The environmentalist (let's call him Luke) views excessive industrial development as harmful, whereas the industrialist (let's call her Jane) views all industry as useful. This is despite the fact that both agree on the need for economic growth and agree about the harmful impacts of industry on the environment. With this agreement, the model could be further elaborated. Here, additional details have been added:

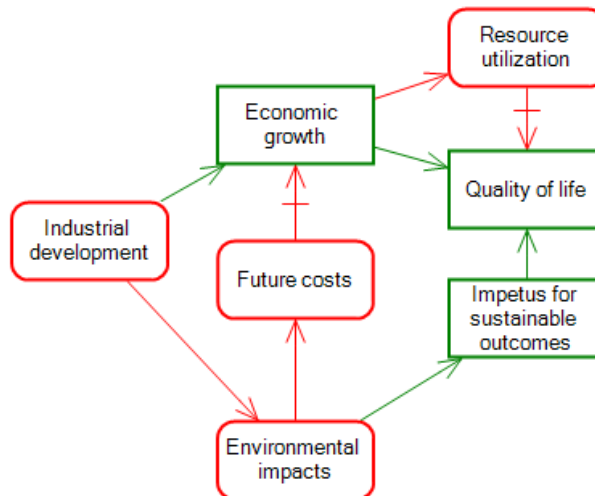


Each block has been divided into two other blocks – one useful, one harmful. This simple technique is powerful; fostering clear thinking about the way every aspect of the situation is useful AND harmful. Even the harmful environmental impacts are useful, providing the impetus for a sustainable solution.

So, despite coming from different perspectives, Jane and Luke can still draw one diagram – after all, who would disagree with the need for quality of life and sustainable outcomes? Jane and Luke can also agree that costs are harmful to industry and to industry’s ability to protect the environment. Similarly, what company director would not like to reduce their resource utilization just as Luke would like to do on behalf of the planet?

As the model develops, Jane and Luke can begin to connect the dots.

In the next model, the blocks are the same, but they have been connected to show the influence of one factor on others. It becomes obvious to both Jane and Luke that “resource utilization” counteracts “quality of life” and that the “future costs” of environmental change could jeopardize “economic growth.”



The arrows in such a model signify “amplifying” effects. The crossed arrows are “counteracting” effects. For example, increasing future costs will reduce economic growth. Increasing economic growth will increase resource utilization, which will reduce quality of life. By adding in these influences, Luke and Jane are becoming aware of the contradictions within this situation. The

You now know the four core concepts of a Southbeach diagram: useful elements, harmful elements, amplifying influences, and counteracting influences. These are enough to get a lot of useful work accomplished. These four elements are often used in workshops. They are not enough to solve the hardest problems, but they are always enough to get started and to work towards alignment.

Easy to learn

- A dashed line means “insufficient.” It can be used for boxes or lines. So it is possible to say “A produces B insufficiently.”
- A dotted line means “potential” ... something may exist in the future, or may be revealed, or come into effect. For example, “If we had A, we could increase B and counteract C.”
- Yellow is used to highlight “focal point” objects in the model. There are often key elements in any situation. Yellow is used to highlight them.

The diagram is a complex flowchart illustrating the relationships between various factors in a system. The nodes and their connections are as follows:

- Economic growth** (green box) has a red arrow pointing to **Resource utilization** (red box) and a green arrow pointing to **Quality of life** (green box).
- Resource utilization** (red box) has a red arrow pointing to **Quality of life** (green box) and a green arrow pointing to **Future costs** (red box).
- Quality of life** (green box) has a green arrow pointing to **Impetus for sustainable outcomes** (yellow dashed box).
- Impetus for sustainable outcomes** (yellow dashed box) has a green arrow pointing to **World knowledge** (grey hexagon).
- World knowledge** (grey hexagon) has a green arrow pointing to a **Strategic choices** (green diamond).
- Strategic choices** (green diamond) has three arrows pointing to three boxes: a green box with a question mark, a red box with a question mark, and a grey box with an ellipsis.
- Industrial development** (red box) has a green arrow pointing to **Economic growth** and a red arrow pointing to **Future costs**.
- Future costs** (red box) has a red arrow pointing to **Environmental impacts** (red double-bordered box) and a green arrow pointing to **Economic growth**.
- Environmental impacts** (red double-bordered box) has a green arrow pointing to **Quality of life** and a green arrow pointing to **Impetus for sustainable outcomes**.
- Insufficient solutions ?** (blue dashed box) has a dashed green arrow pointing to **Environmental impacts**.
- Solutions ?** (blue boxes) are present in three locations: one with a green arrow pointing to **Resource utilization**, one with a green arrow pointing to **Future costs**, and one with a green arrow pointing to **Environmental impacts**.

Southbeach also provides visual idioms for concepts such as “dysfunctional,” “historical,” and “risk.” It provides for “issues” as well as “choices.” Each of these visual effects can be combined

with each other without introducing (too much) ambiguity. For example, an insufficient goal would be filled in as green, but would have a dashed outline.

Southbeach is rich enough for serious work, yet simple enough to learn and apply. Using common shapes, colors, and simple styles of line, the diagrams can be drawn on the back of napkins and on flip charts. Many consultants get by with just two pens:

- Red: harmful
- Green: useful

A full pen set for Southbeach would also include

- Blue: action
- Black: neutral, and
- Yellow: focus/highlight

Many common pen sets for writing, whiteboard use, and flip chart markers come in these colors. With such pens you are armed and ready to start with Southbeach. Software tools can also be used.

More than just a diagram

Every Southbeach diagram is drawn from some perspective. There is rarely, if ever, a “single version of the truth.” This valuable ambiguity drives creativity.

If A is useful, whoever said it was wants more A. If B is harmful, it is obvious that reducing or eliminating B is useful. If useful A produces harmful B, we can immediately think of ways to move forward:

- Find a way to reduce B without modifying A.
- Find a way to modify A to produce less B.
- Find an alternative to A so that B is never produced.
- Etc.

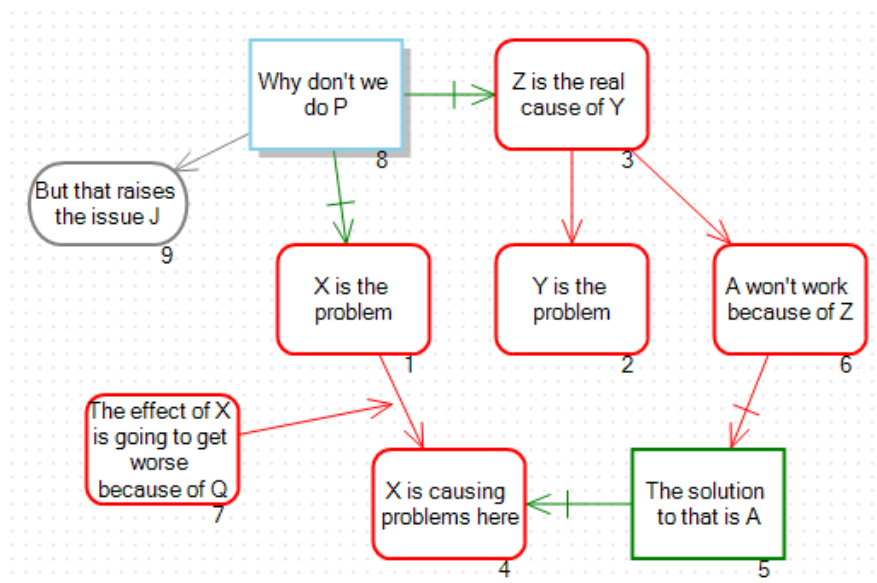
Via simple rules, every Southbeach model helps drive the process of improvement forward. The diagrams take on a greater significance. They are plans for change. The diagrams become powerful tools for team alignment and situational improvement.

The Southbeach workshop

Have you ever tried to draw an architecture diagram or process model in a workshop at the same time as everyone is throwing in his or her ideas? After a while, the process becomes unmanageable. Everyone looks around at each other and agrees, “The diagram on the white board is wrong.” It is often necessary to discard the current diagram and start again from scratch. This happens less so with Southbeach diagrams than with other types of diagrams. Why is this?

Southbeach diagrams have “additive semantics.” New information can be added to the model without disrupting or contradicting the other elements or influences. As new knowledge comes to light, the model is extending without invalidating it.

Take a look at the model below. The numbers indicate the order in which the blocks were added during the workshop. Read the model in that order and you will see how the model developed during the workshop.



Notice how the color of the lines also indicates whether the influence is useful or harmful. This is a natural consequence of the color of the “from” block, the type of the effect, and the color of the “to” block.

Case Study – IT Systems Transformation

Southbeach can be applied by one person, a small team, or a larger group. In a team setting, people work face-to-face, remotely, or in some combination that befits their work style and project need.

It's a good idea to start with a small model. Try not to be over rigorous at first. Encourage participation in the development of shared models.

The models that emerge from such work can later be combined with each other. They become the starting point for larger, more structured workshops. One person usually leads the charge, interviewing colleagues, talking to the client, integrating elements, and then distributing models for comment. In a major project, expect to develop many such models from several perspectives. Some models may contain tens or even hundreds of blocks.

The story below is how Southbeach was used within an IT Transformation Project. The words are those of the facilitator/consultant of that project.

“I ran a workshop with 30 people and 13 Southbeach models created over the last 6 weeks. 9 of these were printed on large sheets of paper, roughly 6 table tennis tables worth. I split people into two teams and gave them red, green, and blue pens to add useful enablers, resources, benefits, and goals as well as constraints, blockers, and harmful side effects and actions to achieve the desired future state. We went through 4 models that were to align perspectives of four departments in the corporation, which I created through individual interviews with the heads of each division. We then went through a model showing the major issues they had to overcome to achieve their vision. We then drilled into 9 of the blocks on this model.

“First I gave an overview of the issue, the options, the useful and harmful side effects of each option, and then why we had made a certain recommendation. Then I sent them to the back of the room in two teams to elaborate the model. After ten minutes, I got them to swap and review and comment on each other's comments. The two teams then came to listen to my description of the next model. After all models were assessed, we did a group discussion on how to move things forward, which I captured as a model. They loved it. Many of them came up to me and

thanked me for the day, saying that it was very useful, and we proceeded to talk further about how to change the ideas in the models into reality.

“Most of these clients had not seen Southbeach before. The first model they brainstormed was a bit slow. By the second model they had picked it up. Everyone agreed this technique had enabled many people from different groups to collaborate in a way they had not collaborated before. The notation in Southbeach enabled this conversation. They enjoyed it and were excited about the possibilities for their future projects.”

In this project, the various models that were developed by the consultant and the team represented different slices or perspectives of the overall situation. This helped the team organize the work in the project and afterwards during implementation:

- By structure: Different layers in the IT (e.g., Infrastructure, Applications, Business)
- By time: Present, Future and How To Get There

Think of this type of work as the super-structure of a Situational Improvement effort.



The following sections explain more of the techniques used in projects as in this example. Of course, no project follows a single path or uses all techniques. Southbeach Notation is a fluid, flexible approach that supports many of the existing creative and problem solving methods team members may already be familiar with. However, the single common feature of such a project is the use of Southbeach Diagram as the primary focus and work product, guiding the work.

Aligning the team – Role of the Consultant

What can we do when people disagree fundamentally? A way must be found to resolve the specific differences of opinion that are preventing progress towards a solution. In short, differences of perspective must be resolved – or cancelled out.

Southbeach contains several useful alignment techniques. A good facilitator, like a great magician, hardly even mentions the technique they are using. It just becomes part of the workshop. The following section presents three such techniques.

Philosophically, there are no “problems” in the world, just re-arrangements of resources among stakeholders. The cost of a product is harmful to the customer, yet useful to the supplier. Without a “cost” the product could never be supplied. The cost is not “harmful” in any real sense: it is a solution for both the customer and the supplier, even if they don’t see it that way at first.

By following a few simple rules, the majority of disagreements can be easily resolved:

Case 1

A difference of opinion emerges between Jack and Gill. In fact, they are each talking about different things but using similar or identical language. For example, Jack claims that the business strategy is useful, but Gill thinks it is a mistake. It turns out that they are talking about two different strategies because the strategy handed down by “Corporate” has been interpreted differently in their respective business units. In fact, they are talking about two different business unit level strategies.

Case 2

Jack and Gill are using the same (or similar) language. They are talking about the same thing, but have very different views about it. For example, Jack says the strategy is useful, whereas Gill thinks it is harmful. The reason they hold different views is that they have not decomposed “strategy” into its parts. Jack is talking about one aspect of strategy, and Gill another. One way this could happen is that they are each talking about the way that strategy is playing out in the context of their work.

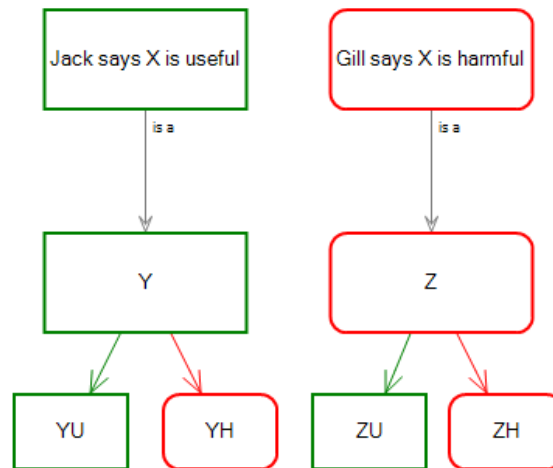
Case 3

Jack and Gill are saying things that don’t seem to add up. They both *appear* to agree, but are not using the same words to describe the situation. For example, Jack says that the development plan is harmful, whereas Gill thinks the problems lie in the incentives and targets. It turns out that they are both talking about the same plan, using terminology from their different business backgrounds.

Southbeach red and green blocks can help Jack and Gill to align on a common model and, therefore, a common understanding of the situation. To understand how, let’s look at the three cases in more detail. Using Southbeach, agreement should just “come out in the wash.”

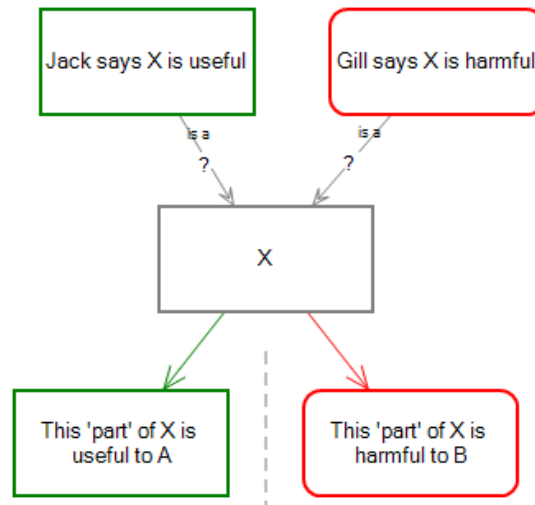
Case 1 – Same words / Different things

Take a look at the model below. It says that X is useful AND it is harmful. That might be true about different aspects of X, but cannot be absolutely true at the system level. Either X is useful to the system or it is harmful. Are they talking about different things? If so, they can decompose each into its respective useful and harmful elements. To find out, take each in turn and see what happens. Do the blocks YU, YH, ZU, and ZH resemble each other? Are Y and Z the same thing, or different?



Case 2 – Same words / Same thing

An object can only be useful *and* harmful – from one agreed perspective – by separating it into its parts. Take a look at the model below. It says that Jack views X as useful, and Gill views X as harmful. If they agree that they are talking about the same thing, but disagree about whether it is useful or harmful to the system, they must be talking about “parts” of that thing. Let’s decompose to find out.



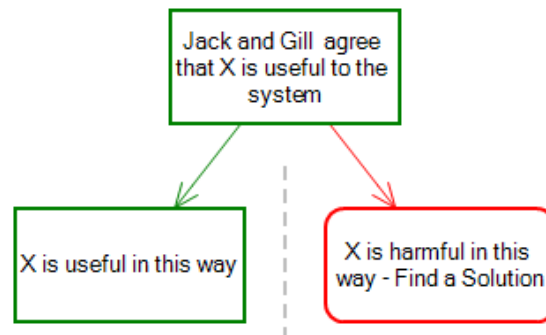
The word “part” should not be taken literally. It may not be a physical part, but a way of looking. These “separations” are important in Southbeach. Think about all of the ways to decompose X into its useful and harmful “parts”:

- Perhaps Jack is thinking about X as it was in the past (and extrapolating to the present) whereas Gill is thinking about X in the future (fearing things won’t change)? This is called a separation in time. Could Jack and Gill align by thinking more explicitly about X in the past, the present, and the future?
- Is Jack talking one part (component) of X, and Gill talking about another? Separation by structure? For example, clause A in the contract and clause B in the contract.
- Is Jack looking at X when it is above another part, and Gill looking at X when it is isolated by being inside another structure? Separation in space? Are they designing the same system but not thinking about the placement of elements in the architecture?
- Is Jack looking at one aspect of X (e.g., the color) and Gill at another (e.g., the weight)? This separation “by aspect” could be quite subtle. Many details of a topic or object of discussion get mixed up in the rush of a workshop and the loose language that is often used. Attendees can often take a position on something without explaining why. It is important to separate out the many aspects of the situation and then decide what is useful and harmful.
- Could it be that by more clearly separating Jack’s and Gill’s roles and responsibilities with respect to X, their view of X could be aligned? In business, separation by role is an important pattern. For example, if Gill is given role R and Jack role Q, maybe X is now useful to both of them? Task assignment, in process design, can often achieve similar results.
- Is Jack talking about X under one condition at the same time as Gill is talking about X under a different condition? Separation by condition? Conditions under which something is considered can easily lead to disagreement. For example, X is only useful if the business has reached its target T.
- Maybe Jack and Gill have different perspectives on the probability of X being harmful, e.g., the risks and relative risks in the business. Separation “by probability” might allow them to agree; e.g., X is only harmful occasionally.

- Are Jack and Gill talking about the same X but in different states or iterations of the system? Separation by “version”? For example, Jack may be speaking about the new X, and Gill the previous X, unaware of the current plan for updating X.
- Or do their perspectives just differ? ... Jack does not “like” X, whereas Gill “loves” X. In that case, do we need to look any further? Why does the difference of opinion exist? Suggestion: Decompose X via many separations (time, aspects, roles, etc.) and find the elements where Jack and Gill can agree.

The separations in time, structure, space, by aspect, by role, on condition, by probability, on conditions, by version, or by perspective are the primary ways in which language can distort agreement in fast moving projects. Models can help people to agree by illustrating the decomposition of the system. Being clear about how the system should be separated not only allows Jack and Gill to agree on whether a specific “part” of X is useful (or harmful) but could also allow them to agree on whether X is useful or harmful overall, in the context of the overall system in which X exists.

Everything is useful and harmful:



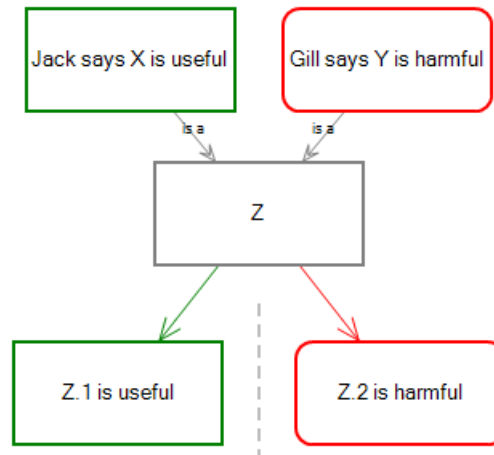
Jack and Gill have agreed that X is useful to the super-system (i.e., to the process, the organization, the design, etc.) They have aligned and understand that X is useful in some ways, and harmful in others. They have listed the ways in which it is useful and harmful. This will allow them to move forward, agree on how the system must be improved, and begin to investigate possible solutions. Already they have some paths to investigate:

- Finding a way to reduce or eliminate the agreed harmful element(s)
- Finding a way of replacing the entire system with an alternative system that does not contains or exhibit the harmful functions?
- Etc.

Case 3 – Different Words / Same Thing

Jack and Gill are using different words to refer to the same thing – without realizing it. For example, Jack is talking about “strategy” and says that the “assumptions” are harmful. Gill is talking about “the plan” and says that the “requirements phase” was not done properly. In fact, they are both talking about the basis of the plan, using the language of assumptions and requirements. Aligning their terminology will help them to move forward. The team can then decompose the problem and begin to find ways to solve it.

In the next model, Jack is talking about X, and Gill about Y. In fact, they are both talking about Z. Recognizing this, they can begin to decompose Z:



Differences of opinion are useful

It is not always possible for a team to work on a single model. Often, different teams, or team members, will want to develop their own model that illustrates different perspectives on, or separations of, the situation. For example:

- A model showing the past; another model, the future
- A model for the Corporate level view, another for the Business unit view
- A top level model, and detailed models for each part
- Etc.

Visual models are a powerful way for everyone to have their say. Different stakeholders, or teams from different disciplines or functions, will find visual models useful for understanding the whole system of which they are but a part. But what if human nature takes over? What if the team does not wish to create a single model?

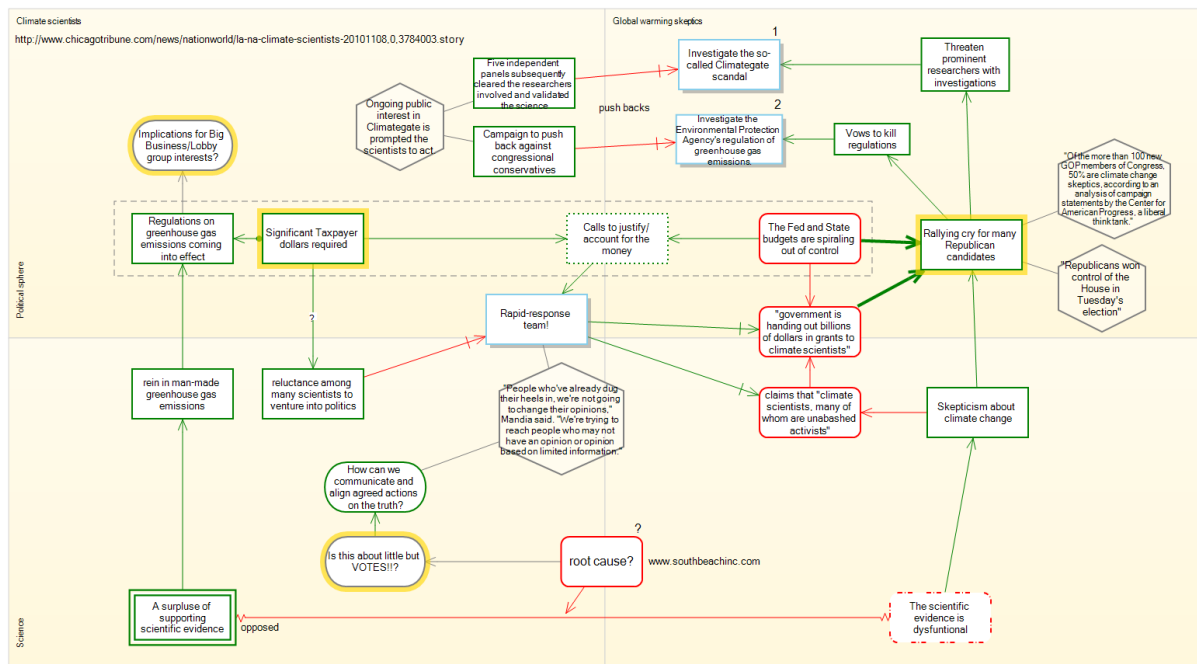
When it is not possible to create an aligned model, Southbeach allows for the explicit visualization of disagreement. There is nothing wrong with this model as a starting point for discussion:



Consultants will typically develop different models by interviewing different stakeholders, and then showing them how their perspectives differ. Confronting a team with models that differ substantially is both illuminating and fascinating. A range of techniques not covered in this paper allows these models to be combined in a way that creates a single model.

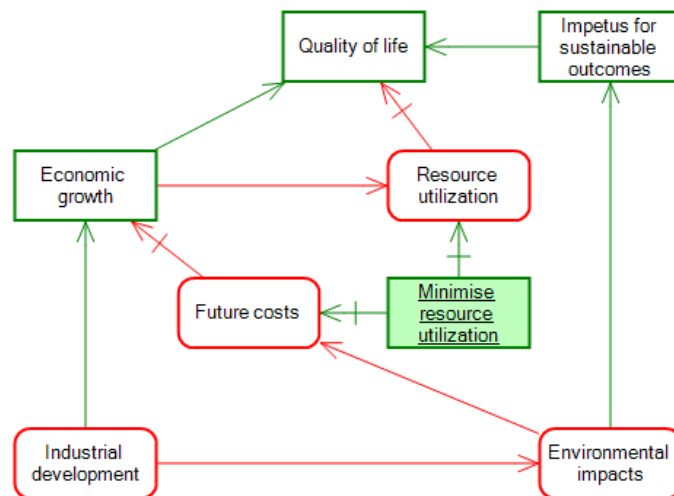
One technique uses a grid to position elements according to their separation. The grid brings the differences together, yet recognizes the perspectives from which they were drawn.

Southbeach Notation supports 1-dimensional and 2-dimensional grids. In the model below, a 2-dimensional grid is used to show the interactions between “Science” and “Politics” from the perspectives of “Advocates of global warming” theories and those of “Skeptics” who question the basis of the scientific analysis. The model illustrates that they do not agree on the extent of regulations and controls on industry.

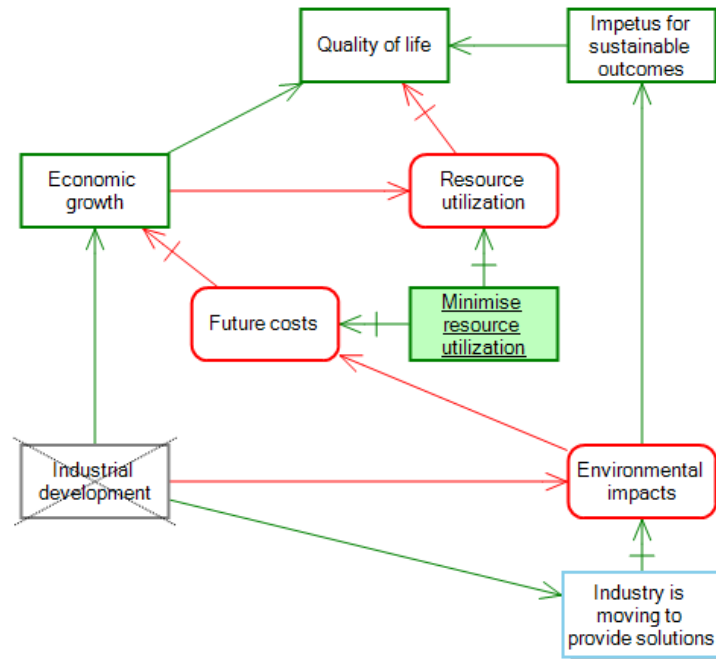


Keep moving forward

A “situation” is an agreed perspective on something the team wants to change for the better – increasing the useful elements and decreasing the harmful elements. Using the example which started this paper, the industrialist Jane and the environmentalist Luke could probably agree on this goal (filled green box):



The block “minimize resource utilization” is a goal from *both* perspectives. However, no doubt they would disagree on “industrial development” being harmful. Yet they have already agreed that development creates beneficial “economic growth” and harmful “environmental impacts.” Let’s therefore remove that block from the model, and simply accept that industry is trying to implement solutions to mitigate impacts. To show this explicitly within the model, rather than leaving it unsaid, Southbeach provides two important constructs: “historical” (X) and “actions” (blue). Actions are suggested interventions.



Let's assume, for the sake of the following section, that this model is now "agreed." The model can suggest directions for situational improvement. This can be conjured up at any time during the development of the model. The output can guide model development, and align on a direction for problem solving. Here are some examples:

1. Find a way to increase the effectiveness of [New industrial approaches] in limiting [Resource utilization]
2. Find a way to limit [Economic growth] from increasing [Resource utilization]
3. Find a way to amplify [Industrial development] in producing [Economic growth]
4. Find a way to limit [Industrial development] from increasing [Environmental impacts]
5. Find a way to amplify [Environmental impacts] in producing [Societal impetus for sustainable outcomes]
6. Find a way to amplify [Societal impetus for sustainable outcomes] in producing [Quality of life]
7. Find a way to amplify [Economic growth] in producing [Quality of life]
8. Find a way to limit [Resource utilization] from decreasing [Quality of life]
9. Find a way to limit [Environmental impacts] from increasing [Future costs]
10. Find a way to limit [Future costs] from decreasing [Economic growth]
11. Find a way to increase the effectiveness of [New industrial approaches] in limiting [Future costs]
12. Find a way to increase the effectiveness of [Industry moves to provide solutions] in limiting [Environmental impacts]
13. Find a way to amplify [Industrial development] in producing [Industry moves to provide solutions]

Where did these suggestions come from? Are they "baked" into Southbeach Notation?

Your Creativity

Rules can be added to Southbeach models. Individual consultants, or teams working together, add rules to their models. The output generated helps to guide their work.

The thirteen lines of output in the last section were generated using four rules:

- produces (, harmful) "Find a way to limit {from} from increasing {to}"
- counteracts (, useful) "Find a way to limit {from} from decreasing {to}"
- produces (, useful) "Find a way to amplify {from} in producing {to}"
- counteracts (, harmful) "Find a way to increase the effectiveness of {from} in limiting {to}"

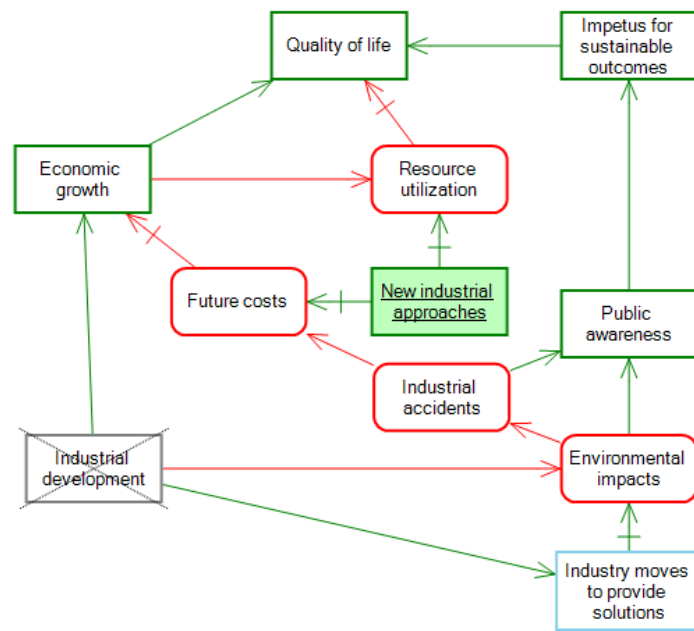
You can see that some of the directions suggested are contradictory; for example:

1. Find a way to amplify [Environmental impacts] in producing [Societal impetus for sustainable outcomes] and
10. Find a way to limit [Environmental impacts] from increasing [Future costs]

How can we reduce environmental impacts and increase them at the same time? The existence of a contradiction in the output implies that the model contains problems that the team has not solved.

Spotting all of the contradictions in a complex situation is not easy. It could require the team to examine the situation from several different perspectives, as well as to decompose the model to a sufficient level of detail. A good facilitator can tackle some of this “on the whiteboard.” For more complex projects, software tools may be needed.

Rules can also be used to guide the interactive development of a model by asking questions that lead the team to develop the model in preferred directions. In this model, the blocks “industrial accidents” and “public awareness” have been added:



Now that the model contains these additional elements, the list of contradictions in the model is

1. [Industrial development] [Economic growth] [Environmental impacts]
2. [Industrial development] [Industry moves to provide solutions] [Environmental impacts]
3. [Economic growth] [Quality of life] [Resource utilization]
4. [Environmental impacts] [Public awareness] [Industrial accidents]
5. [Industrial accidents] [Public awareness] [Future costs]

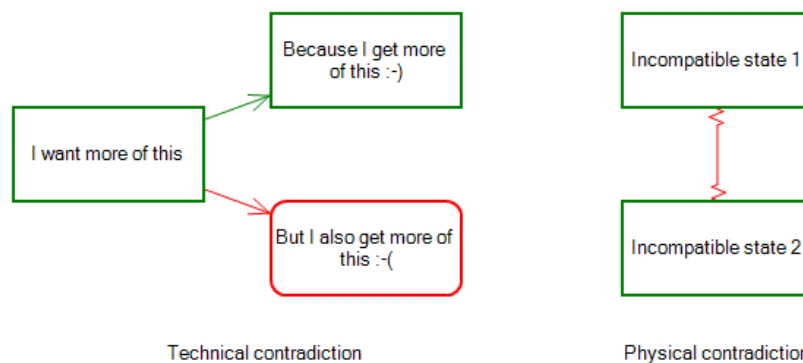
The list was generated by the rule:

```
useful(&a=*, &b=*) harmful (&a, &c=*) "{&a} {&b} {&c}"
```

How do the rules get developed? Standard sets of rules are starting to appear, which can be applied to any model. These reflect communities of practice, or are implemented to support specific methods and creative tools, such as root cause analysis (RCA), TRIZ², theory of constraints, De Bono methods, SWOT, and many others. In some projects, rules are developed in advance, in others, organically, during the project. It turns out that every consultant and analyst has lists of questions and assertions they have found useful in the past. They can be encoded as simple rules and reused.

Contradictions are everywhere

The concept of a “contradiction” is very well understood by practitioners of TRIZ. You know you have a problem when you have exposed a contradiction. There are two main types:



A *technical* contradiction arises from the design of a system – something about the design that increases harmful effects if the useful outputs are increased. For example, we push an engine to produce more power, and it generates more heat.

A *physical* contradiction arises from the nature of reality itself; for example, X cannot be inside a space and outside the same space at the same time. Something hot cannot also be cold. Etc. Finding contradictions, and understanding which type you are dealing with, is critical to problem solving.

It is tempting to compromise when faced with a contradiction. To solve the contradiction and remove it from the system is far harder, as any engineer knows when faced with a complex set of constraints or requirements. Yet solve them we must, if we want to move forward.

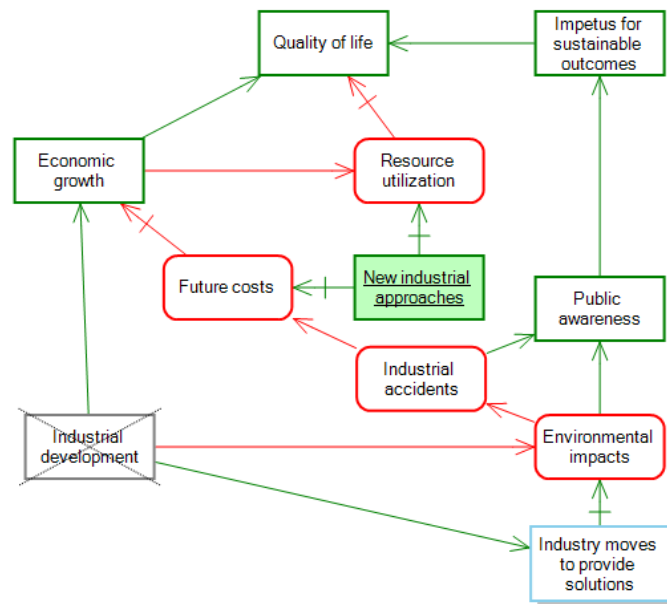
Suppose a part of a system needs to be both “up” and “down.” How is this possible? Try this: Separate in time! Ask *when* it needs to be at the top. Ask *when* it needs to be at the bottom. This is called root requirements analysis (RRA). In this case, it suggests a solution: Change the design to move the part so that it is at the top when it needs to be and at the bottom at other times. Mechanical solutions like this seem far removed from business, but think obliquely and you’ll find they do apply. These “mechanical” analogies and patterns of problem solving documented by the TRIZ community are powerful approaches in softer contexts such as business and society.

² <http://www.triz-journal.com/>

Solutions abound when you start to think about separations. How about moving the viewpoint, instead of the part? That way it can be up and down, as or when required.

To some, these solutions come naturally. Some may have a “lateral thinking” mind. Others need the help of suggestions documented in reference guides or suggested by software applications.

Rules can be added to Southbeach models that will generate many different types of suggestions – “creative” approaches for brainstorming. By adding rules that directly address contradictions, many “creative” directions for brainstorming and problem solving can be generated. Take this model:



By focusing on “environmental impacts,” the diagram suggested

1. What solutions come to mind if we ask: How can we have the benefits of [Public awareness] without [Industrial accidents]?
2. Do [Environmental impacts] really produce [Industrial accidents]? Are we looking at the right problem? Is [Industrial accidents] produced by something else?
3. Is there a way to intervene and limit the ability of [Environmental impacts] to produce [Industrial accidents]?
4. Is there a way to completely prevent [Environmental impacts] from producing [Industrial accidents]?
5. Find a way to remove [Industrial accidents] while it is being produced by [Environmental impacts].
6. How much of a problem is [Industrial accidents]? Can we find a way to cope with [Industrial accidents]?
7. Can we put off the harmful effects of [Industrial accidents] for the time being? How will we cope with [Industrial accidents] in the future?
8. Could [Industrial accidents] be converted into something less harmful?
9. What can we introduce to counteract the harmful effects of [Industrial accidents] produced by [Environmental impacts]?

10. Assuming we cannot remove [Industrial accidents] or its effects, can we find a positive use for [Industrial accidents]?
11. What does the next generation of [Environmental impacts] look like?
12. Can [Environmental impacts] be modified so as to produce less [Industrial accidents]?
13. Find the part of [Environmental impacts] that produces [Industrial accidents] and remove that part without impacting the ability of [Environmental impacts] to provide [Public awareness].
14. Combine [Environmental impacts] with something else so that the [Industrial accidents] are no longer a problem.
15. Combine [Public awareness] with something else so that the [Industrial accidents] is no longer a problem.
16. Change the design of [Environmental impacts] so that it produces no [Industrial accidents] at all.
17. Find an alternative to [Environmental impacts] that does not produce [Industrial accidents] yet still produces [Public awareness].
18. In what way could the system be changed so that the production of [Industrial accidents] by [Environmental impacts] is insufficient to have harmful effects?
19. Is [Industrial accidents] a problem for [Public awareness]? Can we separate [Environmental impacts] or [Public awareness] from [Industrial accidents] into different systems?
20. If the production of [Industrial accidents] is unavoidable can we find a way to isolate the [Industrial accidents] so that it cannot harm the system?
21. Can we add something to the system that reduces or eliminates [Industrial accidents]?
22. Can we add something to the system that makes [Public awareness] more useful so that [Industrial accidents] is perceived as less of a problem?
23. Add something to the system that minimizes the need for [Public awareness] so that less [Environmental impacts] is needed so that less [Industrial accidents] is produced.
24. Do we need [Environmental impacts] for reasons other than [Public awareness]? If not, we can remove [Environmental impacts] and avoid [Industrial accidents].
25. Think about the future. Will we be obtaining [Public awareness] in another way? Will [Environmental impacts] therefore be less relevant, solving the problem of [Industrial accidents]?
26. How will the demand for [Public awareness] change in the future? Will it still be obtained from [Environmental impacts] and will [Industrial accidents] therefore still be a problem?
27. What does the next generation of [Public awareness] look like?
28. Can we reduce the need for [Public awareness]? If so, we can reduce use of [Environmental impacts] and therefore produce less [Industrial accidents].
29. Find an alternative to [Public awareness] that has the benefits of [Public awareness] but is not dependent on [Environmental impacts].
30. What does the next generation of a system that contains [Public awareness] look like?
31. Do we need [Public awareness]? If not, we can remove [Environmental impacts] and avoid [Industrial accidents].

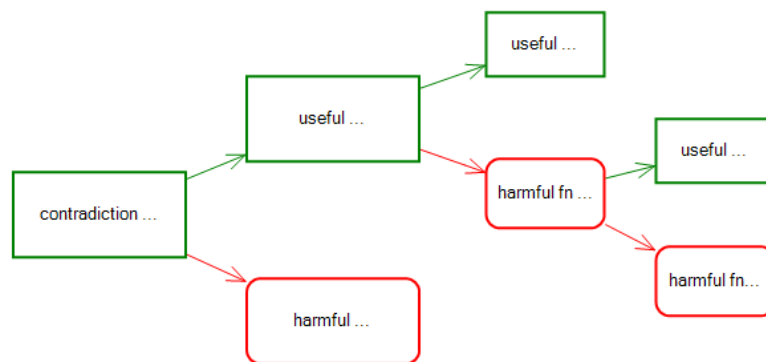
While some of the directions suggested seem to make no sense, each is a valid problem solving direction. Examining the output from Southbeach models helps teams to improve their models, align on problems, and find solutions.

Where to start?

A Southbeach diagram is, at its core, a simple “line and box” diagram. The boxes state what is important about the situation, and the lines define the effects or influences among them. By defining what is useful, and what is harmful, what is insufficient, etc., directions for moving forward are generated. But when confronted with a blank canvas, where does one start?

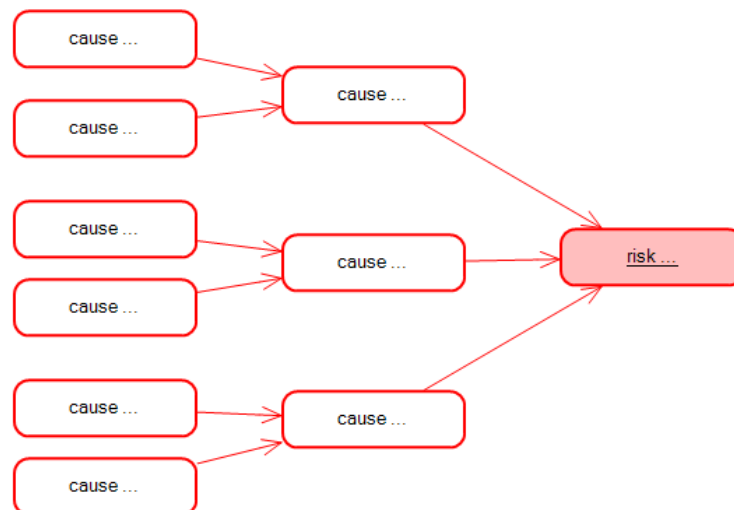
Example 1: Pros and Cons decomposition

Southbeach models can act as templates, starting points for the application of a specific problem solving or improvement method. Here, a simple model is used to “break down” a situation into its useful and harmful elements. Each line is an amplifying effect; that is, increasing one element increases all of its outputs. Each block in the model therefore represents a contradictory situation.



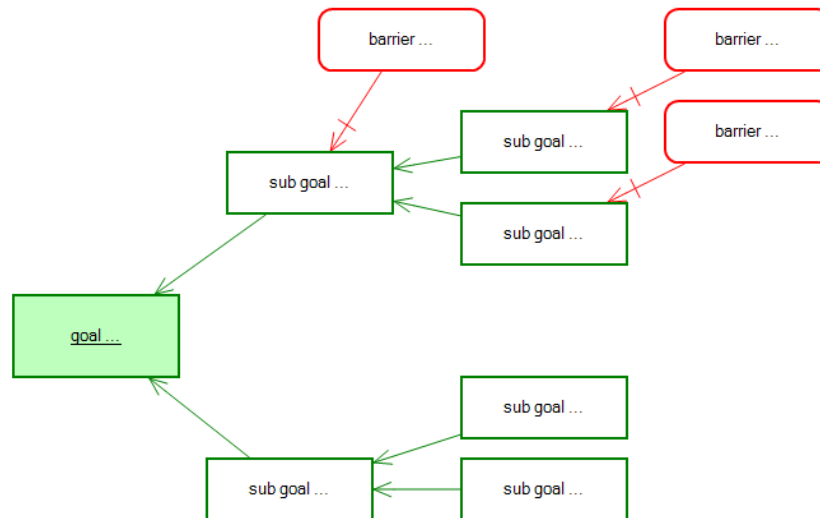
Example 2: Root cause chain

In the next diagram the consultants have taken a different approach. Here, they are trying to understand risk by following a chain of contributing causes *backwards*.



Example 3: Goal achievement and barriers diagram

Another common approach is to look at the situation or the system in terms of *goals*. In this model, the sub-goals that contribute to the main goal are represented as useful elements. Those elements which hinder archiving the goals are denoted as harmful elements.



The three examples illustrate how Southbeach can support different modeling approaches. A full description of the notation opens up other possibilities. A single tool can be used in many different contexts. Rules are developed which reflect different work styles; for example:

goal “What sub-goal contributes to this?”
risk “What is the cause of {this}?”
useful “What does {this} produce that is harmful?”
Etc.

Southbeach is not a single “automated” methodology. To successfully solve problems in any field requires deep experience. Southbeach can help teams be more methodical, more complete, and more directed towards their goal. The notation is easily understood by team members from different backgrounds.

Structuring the work

Southbeach is a language for describing “problems” (harmful) and “solutions” (useful). Green blocks indicate solutions. Red blocks indicate problems. Modifiers further clarify a situation. For example:

- A dotted line means “potential,” e.g., a solution we need or a problem that could arise.
- A dash line means “insufficient,” e.g., a solution that only partially works, or a problem that we can cope with.
- A cross means “historical” – a solution no longer available to us or a problem that has been solved or gone away
- Etc.

Southbeach can therefore describe not only the concrete situation, but the abstract process we intend to use to solve it.

they are working on. No complicating factors or solution ideas are found, actions are planned and



The hexagon shape in Southbeach signifies supporting “knowledge.” Here it shows a range of problem-solving methods. In a root cause analysis (RCA) it could show the facts or theories supporting the causal links.

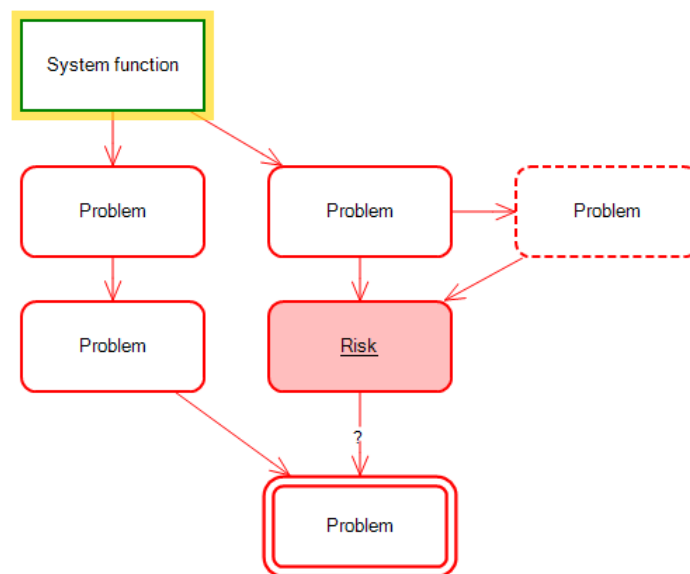


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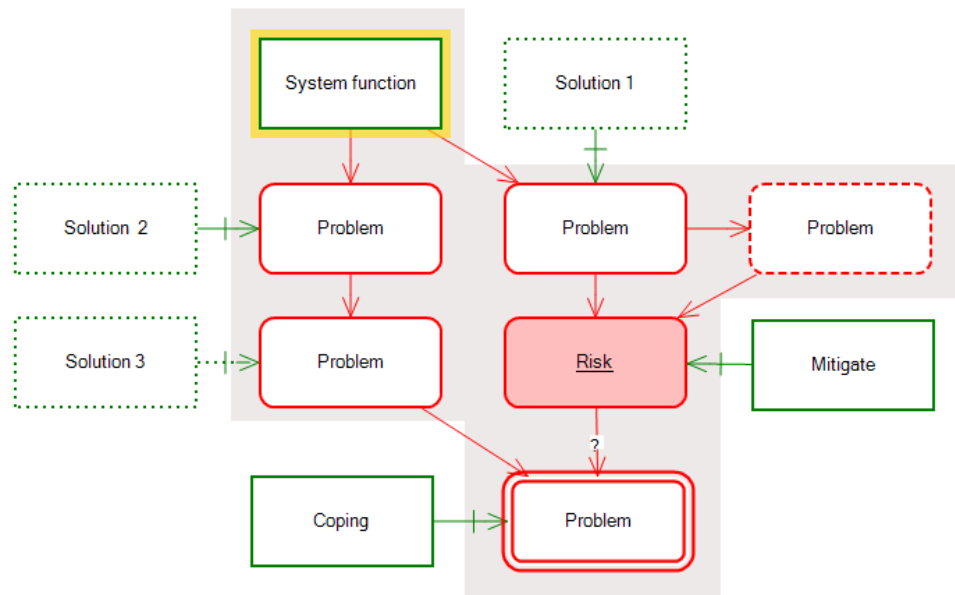
assigned to individuals for implementation. Southbeach provides a blue block to denote such actions. Together with “historical” (X), the sequence of building the diagram shows the build up of analysis, problem solving, solution development, and action. The lifecycle of the problem can be visualized. This simple idea is the basis of change management with Southbeach.

- Start with the problems.
- Add in the solutions.
- Decide on the actions.
- As actions are completed, map out which problems are eradicated.

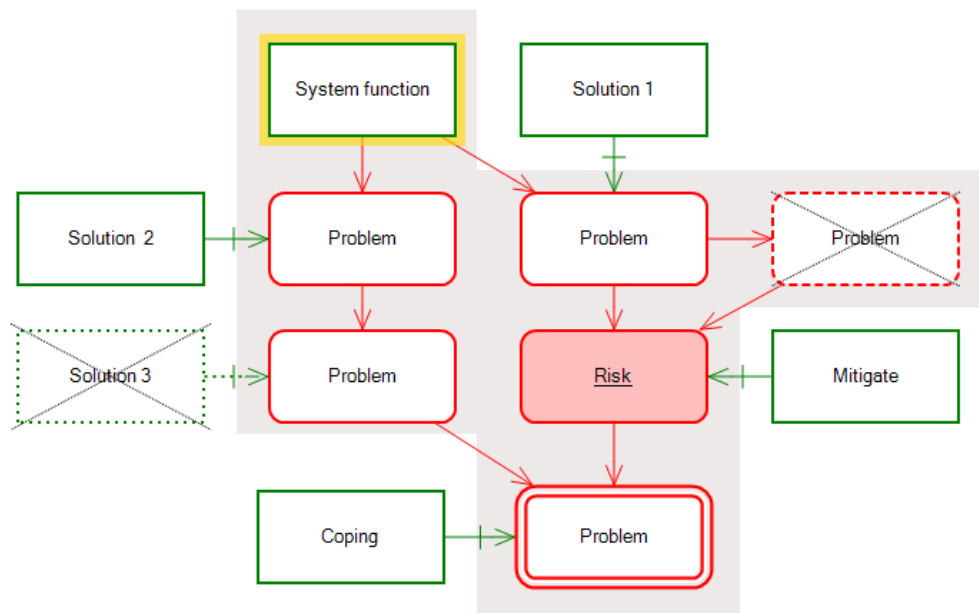
Here, a useful system (highlighted in yellow) is shown. It contains a variety of problems (red blocks) leading to a system risk (solid red). One of the problems is minor (dashed line). We may be able to ignore that. One is major (doubled line). A risk is indicated (solid red), which could be the source of the problem (? = questionable).



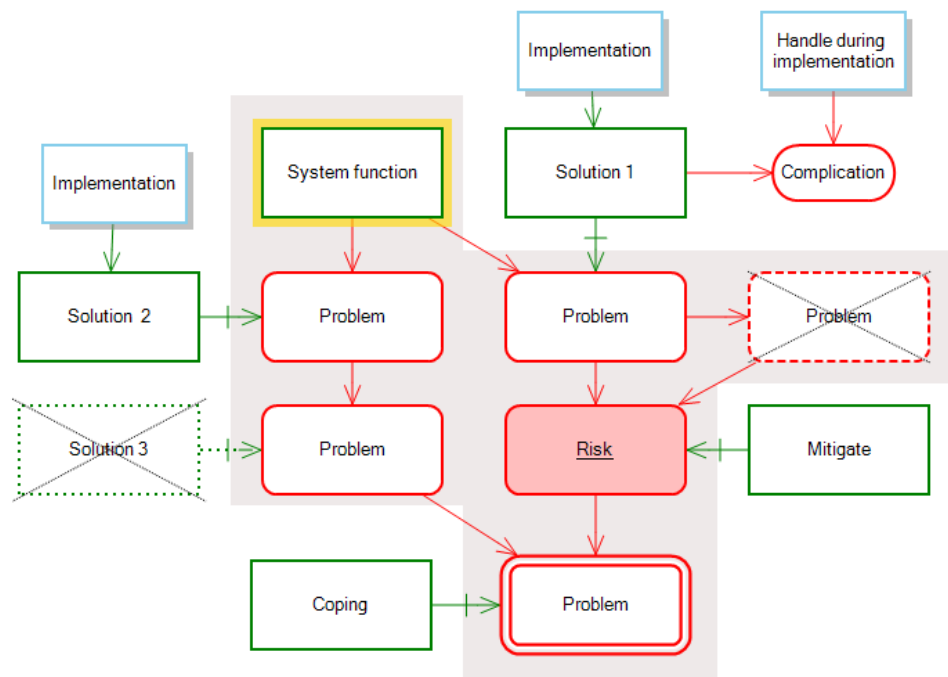
Developing this model further, we could add in potential solutions, as well as the activities we need to perform to mitigate the risks or to cope with the excessive problem areas. In the next model, the original model is shaded, and new blocks have been added.



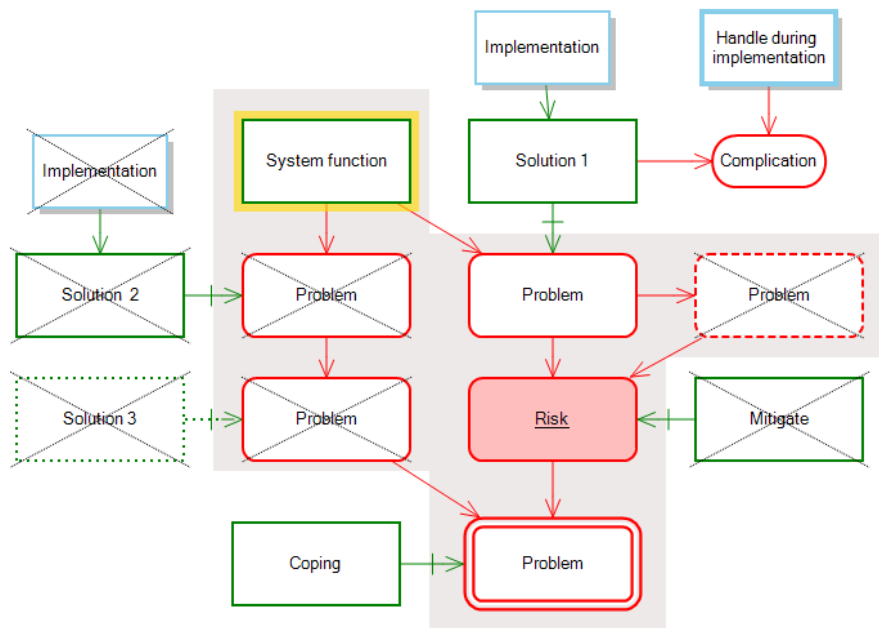
As we decide on the solutions we wish to implement, the model will evolve again. In the next model, we have decided that solution 3 is not necessary if we can make solution 2 work, since solving this will solve the downstream problem. We've also decided that the minor problem can be ignored. Solution 1 and 2 are now firmly planned (they are no longer "potential"). And we've confirmed the questionable link between the risk factor and the serious problem.



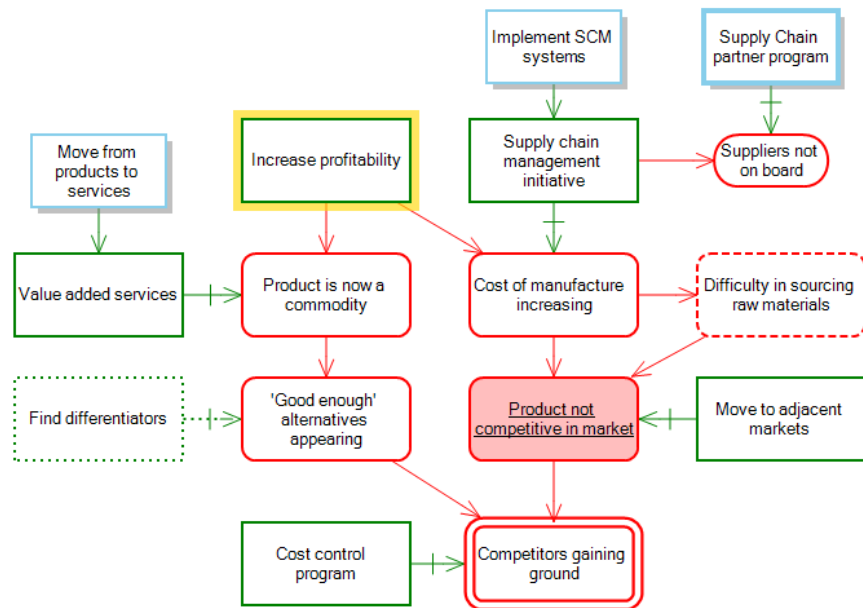
We can now add the actions (interventions) that we need to implement the agreed solutions. These are signified by blue boxes (considered useful). At this stage of planning we also found that the solution 1 we proposed contains a complicating factor. Any "issue" arising from the situation is denoted by a lozenge shaped box. We have therefore added a handling action during the implementation project for solution 1.



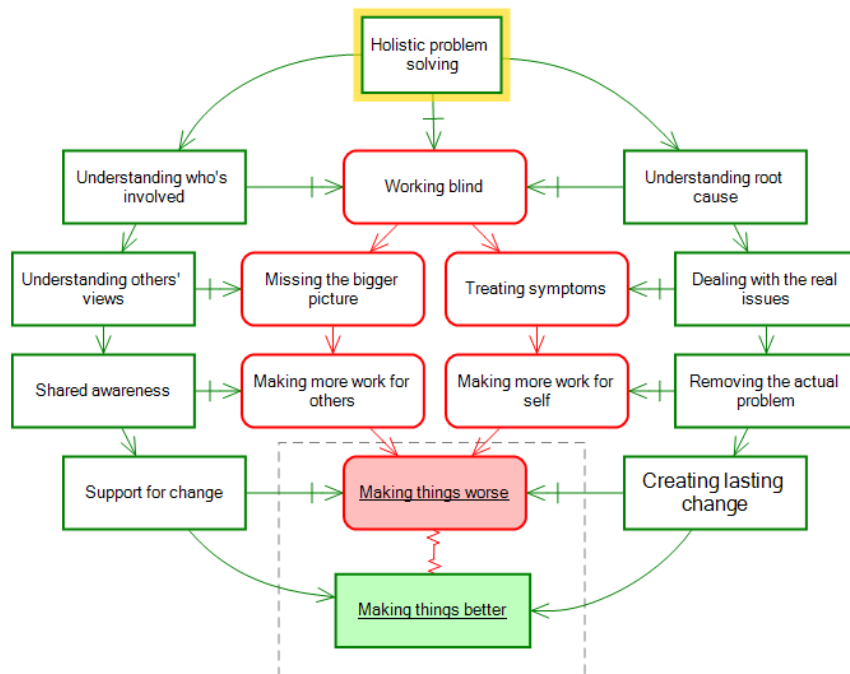
As a project progresses, Southbeach diagrams can be updated, showing the progress so far or the new issues arising. In the next model, the implementation of solution 2 is complete, eradicating the problems on the left hand side of the model. We have mitigated the risk, but found that the complication of solution 1 is more severe than we thought. The handling action has been emphasized (bold blue).



This sequence by which the model has developed shows one way a Southbeach project may play out. We've used abstract words such as "solution," "problem," and "risk." The sequence would make more sense if the concrete words from a real project were substituted. It might look something like this:



Whatever the end point of a project, there is also a starting point. Southbeach models can be used to describe best practices, templates, or work aides. Here is an example of how one consultant started a Southbeach workshop. The model reminds the attendees of the challenges involved with any major change project. Not only is the model a useful starting point for modeling, it helps ensure that the effort gets off onto the right footing.



Appendix A: Software for Southbeach

The Southbeach diagrams included in this paper were produced using Southbeach Modeller; a product of Southbeach Solutions Ltd. Information about the software can be obtained from:

<https://www.southbeachinc.com>

Appendix B: Southbeach Notation Specification

A specification of Southbeach Notation (0.8) was published by BPTrends in May of 2008. An updated specification, Southbeach (0.9), was released in 2011.

<https://www.southbeachinc.com/notation.html>