

40 Breakthrough Concurrent Enterprising Strategies

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Abstract

The paper describes the form and means of application of a series of 40 inventive strategies uncovered as the result of the systematic study of over 2 million win-win solutions taken from across all forms of human endeavour. The paper details the 40 known strategies and provides examples of their application in the context of concurrent enterprising requirements in its most general sense. An exemplar problem is used as a means of demonstrating how the strategies can be used to systematically generate win-win solutions to all forms of conflict, trade-off and contradiction based situation.

Keywords

Innovation, management, win-win, systematic.

1. Introduction

In their attempts to conduct business for effectively, the large majority of organisations adopt innovation strategies built on trade-off and compromise, in which one aspect of business performance is improved at the expense of another. A systematic programme of research to identify and distill the best practices has shown that those organisations that sought to challenge and eliminate the compromises and contradictions that their contemporaries assumed were unchallengeable or fundamental, have achieved considerably better business performance [1]. Building on a preceding study involving over 1500 person years of research examining the dynamics of system evolution from across all fields of human endeavour, the paper shows that all compromise eliminating solutions so far observed – including those seen throughout the business world – can be derived from 40 basic strategies [2]. The paper goes on to examine these 40 strategies for breakthrough business innovation in the context of their relevance to the trade-offs and compromises present in the concurrent enterprising arena. The paper provides a list of the 40 known strategies alongside real world and hypothesised future examples of those strategies in action. A final section of the paper examines a real case study problem and demonstrates how the strategies can be used to help generate deployable and effective win-win solutions in the networked economy.

1.1 Existing Theories and Work

Whilst the idea of achieving trade-off eliminating, win-win business solutions has long been seen as an attractive goal, there has been little research effort expended in trying to distill the generic elements present in those cases where such an outcome has been achieved. A failure to recognise that at an abstracted level all business have to solve very similar problems (most organisations involved in improving their time to market for example have done so at the expense of something else – for example increased cost or reduced specification or, more commonly, increased risk) has traditionally meant that the good solutions from one sector take a long time to transition to others.

The distillation of compromise-eliminating practices across all fields of engineering and science have revealed that all win-win solutions have emerged from – so far – just 40 inventive strategies. A recent programme of research has demonstrated that businesses and managers are using precisely the same 40 strategies when they have achieved win-win solutions. In the technical arena, the 40 inventive strategies have already begun to prove their worth in accelerating the transfer of good solutions from one discipline to another. In this arena it has been shown that win-win solutions can now be achieved in a much more systematic and disciplined fashion. In the business model design arena generally and the concurrent enterprising arena specifically, there has thus far been little if any exposure to the 40 known inventive strategies and consequently any win-win solutions have tended to emerge in a piece-meal fashion. The systematic deployability of good solutions from other sectors to those interested in concurrent enterprising, and the idea that ‘someone, somewhere has already solved your problem’ forms the main theme of the systematic innovation method. The basic underlying principle of the methodology is described in Figure 1 below. The systematic innovation research has mapped the best win-win solutions to a wide variety of abstracted problem settings; the owner of a specific problem is required first to map their problem onto the generic framework, and to then translate generic solutions into one that fits the constraints of the specific situation.

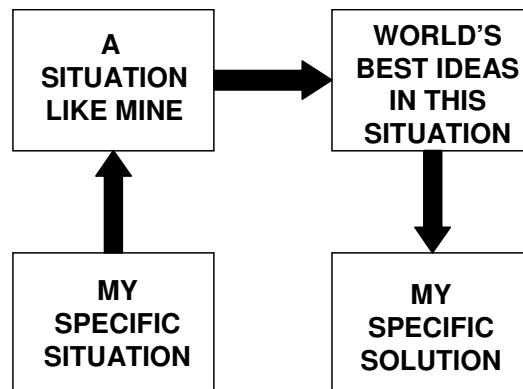


Figure 1: Generic Problem Definition/Solution Strategy

The main focus of this paper is the transition from world’s best generic solutions to specific solutions. Papers [3, 4] have discussed the other parts of the process. The justification for focusing on just the latter part of the process here is that it is possible to employ the 40 generic win-win strategies in a systematic brainstorming approach and generate successful solution without the preceding parts of the process.

1.2 Research Approach

The approach adopted in the research has involved the systematic trawling of the management, engineering and scientific literature in search of win-win solutions. Thus far, over 2 million such solutions have been recorded since analysis first commenced in 1946. In each case, the research team – which currently totals 25 full-time researchers – examines a solution in order to identify the compromise that has been challenged (for example, where a business has successfully challenged a time versus risk conflict or a quality versus cost conflict) and the inventive strategy or strategies that have been used in achieving the solution. Each solution has then been placed within a matrix of contradictions intended to offer a means of enabling users in other fields to identify a contradictory pair of business requirements and be able to immediately observe – and hence use – the inventive strategies that have been successfully used by others that have already solved a similar contradiction.

1.3 Findings

The findings of the research – which is ongoing in order to ensure that new solutions are fed into the contradiction elimination database as they emerge [5] – are that businesses that are successfully challenging the conflicts and contradictions associated with concurrent enterprising are using precisely the same 40 inventive strategies found in other sectors. The research has further identified examples of all of the known 40 strategies being used in a concurrent enterprising setting, albeit some are used much more frequently than others. The main implication of the findings is that provided a business can identify what concurrent enterprising contradictions it is facing, a list of the inventive strategies can be used as a focus for paradigm-breaking win-win solution-finding brainstorming activities.

The Appendix section at the back of the paper provides a reference of each of the 40 strategies, and examples of their application. The strategies have been deliberately presented and described in a generic way in order to best match the mode of operation with which the human brain operates when being creative [6]. The remainder of the body of the paper will now focus on a typical method of use of the strategies to help generate inventive solutions to an exemplar concurrent enterprising problem situation.

2 Exemplar Problem - Merger Of Two Companies

The problem setting used here to illustrate the application of the inventive strategies involves an abstracted version of an actual situation involving the merger of two supposedly similar organisations. It is hoped that by generalising the problem it will be relevant to the maximum number of readers. In any event, the main point of the example is to illustrate the mechanisms involved in using the inventive strategies to generate more viable ideas than would have been the case in normal situations.

The merger of the two companies, meanwhile, has been done through a friendly negotiation between respective CEOs. One company is a key supplier to the other, and it was surmised that closer integration would facilitate both savings in overhead and, more importantly, present significant opportunities for reducing inventory and time-to-market. The two companies are situated about 150km apart. Six months into the merged operation it is becoming clear to the senior management team that the projected benefits have not appeared, and due to a developing antagonistic relationship between the staff of the two companies, actually seem to be heading in the wrong direction.

Traditional root cause analysis of the problem turned up nothing more than the fact that there is deep-seated mistrust between the staff of the respective companies. In these situations where the root cause either cannot be found or be resolved (see also [7] for a discussion of when root cause analysis becomes a hindrance rather than a help), a proposed alternative strategy involves simply recognising that a contradiction exists, and then using the inventive strategies to generate win-win solutions that might help to resolve that contradiction. We can use all 40 of the known strategies as brainstorming foci, or we can use the win-win matrix [5] to identify the 4 or 5 most likely of the 40 – i.e. the ones that have already been successfully used in similar problem situations. In this case, the conflict may be seen as one involving the need to improve the interface while simultaneously reducing the cost-base. The win-win matrix suggests the strategies most commonly used to resolve this kind of conflict are the five illustrated in Figure 2.

The additional descriptive text and examples for each strategy contained in the Appendix may then be used as a means to help generate solution opportunities. The first part of this process involves connecting elements of the problem situation to the strategy. Thus, for example, the suggestion that Strategy 3, 'Local Quality' might have something to do with

helping to solve the problem, we need to identify elements of the current system that are homogenous or being treated in a homogenous manner, and apply the local quality idea to



those elements.

Figure 2: Most Likely Inventive Strategies To Improve Merger Of Two Companies

Ideas generated from the Local Quality strategy and the other four suggestions is presented below:-

Local Quality – recognise and make use of the differences in the cultures of the two companies, interviews conducted with individuals/small teams, treat transactions between the two companies differently from external transactions, identify key peer-group influencers and focus selling of the integration on them, co-locate only the necessary parts of the two companies, flexible working hours, temporary secondments from one site to another, relocation or commute packages for employees, transfer key individuals from one site to another to act as scouting/report-back party to other workers

Self-Service – make staff aware of the situation and encourage formation of teams to take on responsibility (themselves) for improving effectiveness, recognise that all complex systems are emergent from basic bottom-up rules and directions and avoid top-down strategies, loan out under-utilised workers to other organisations/external customers

Calm – make all staff aware that there will be no (compulsory) redundancies; that the intention is to grow rather than shrink the head-count, introduce a breathing space in which no changes will be made – allowing the system time to bed-down, neutral third-party negotiation team, away-day sessions to involve staff in the integration process more fully

Dynamize – exchange staff between the two sites on either a temporary or permanent basis, rapid-response team tasked with integration, take the opportunity to instill ‘change is the only constant’ culture – thus increasing preparedness for future events, flexible/non-hierarchical organisation structure, rapid reaction force

Intermediary – use an intermediary organisation to manage the integration of the two teams, set up a working group consisting of people from the two organisations, inter-site communication protocols, team-building event at third venue

Of course, the list of ideas generated is not as exhaustive as it would have been with several different people carrying several different perspectives of the situation, but then the point has been primarily to demonstrate the process. The list is also incomplete because only 5 of the 40 possible strategies have been used. With sufficient practice, it is usually possible to generate additional ideas from a good majority of these strategies also. Lack of space is the only thing preventing us from doing so here. The reader may care to try and use some of the other inventive strategies as triggers to generate more ideas to help solve the merger problem. More important from the perspective of observing the process, meanwhile, is that we now take the idea generation to its next stage:

3 The Importance of Idea Integration

Experience using the process indicates that it is highly unlikely that ‘the best’ answer to the problem situation is going to emerge through the use of just one of the ideas generated from one of the inventive strategies. Far more likely is that much stronger solutions will emerge through the combination of different ideas generated through different strategies. Figure 3 illustrates the means by which the combination process appears to work most

effectively. The top of the figure illustrates the generation of ideas – here drawn as hexagons following the convention of LVT MagNotes [8] – around a range of different strategy suggestions.

The second stage of the process then involves a process of clustering the various individual ideas. This happens due to the presence of some degree of overlap between the different strategies. This overlap is deliberately planned in order to ensure that all of the available solution space is covered. This ‘cluster’ stage is a more analytical than generative stage of the process. The third stage, however, then reverts back to a generative mode as attempts are made to combine individual clusters of ideas in order to create a more powerful composite.

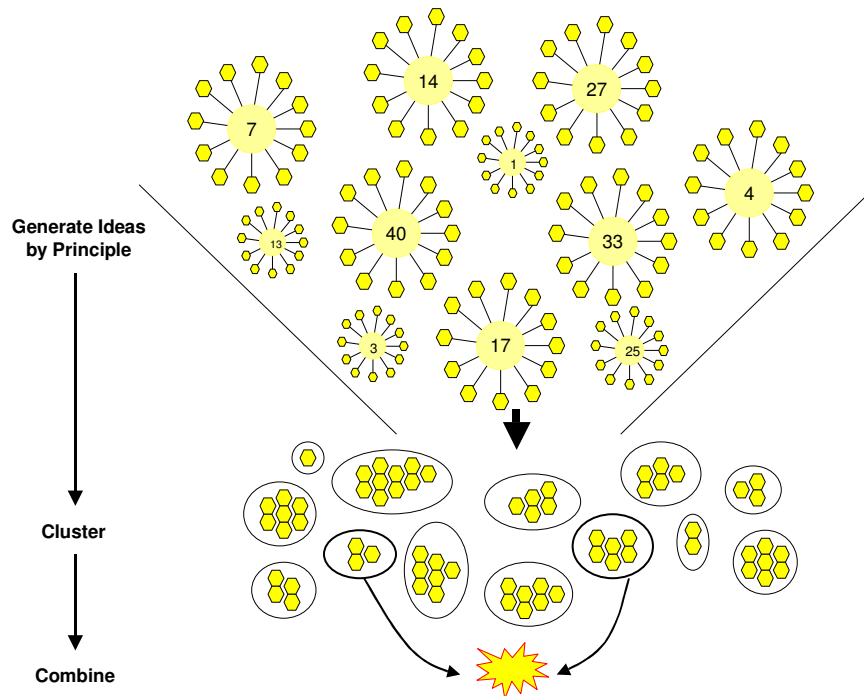


Figure 3: Typical Generate-Cluster-Combine Inventive Strategy Deployment Process

By way of a simple example of this combination process in action, we might take the ideas generated from the Intermediary and Local Quality strategies and combine them to create, an intermediary working party involving staff from both of the companies involved; where those staff are picked on the basis of demonstrated willingness to make the collaboration work.

The generate/cluster/combine sequence is deliberately used in order to help manage the complexity of the idea generation process. It also happens to be highly consistent with the use of different Thinking Hats™ [9] when fundamentally different modes of thinking are being used. Here we see the generate and cluster parts of the process using typically ‘green hat’ (creative) thinking modes, while the intermediate cluster phase is essentially a white hat (objective) operation.

4 Conclusion

The large majority of enterprises conduct their business using traditional trade-off and compromise perspectives of the world. The overwhelming research evidence suggests that the most successful enterprises do not use such strategies when they are looking to improve the way they conduct their business. The research evidence further suggests that taken across every field of human endeavour there are thus far just 40 known strategies

through which compromises and trade-offs can be challenged and eliminated. The paper brings these 40 strategies together in the specific context of concurrent enterprising for the first time anywhere. They are intended to be used as a complement rather than as a replacement for other problem solving and idea generation methods. If experience from other sectors is repeated, their adoption in the concurrent enterprising arena and increasingly networked economy can be expected to pay significant dividends for those organisations that seek to adopt them.

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Appendix:

40 Inventive (Concurrent Enterprising) Strategies With Examples

These 40 Inventive Strategies have been shown to apply to both technical and non-technical problems. Although the systematic innovation method accepts that more strategies may be discovered in the future, for now we know just 40. The strategies can be used as the basis for systematic brainstorming sessions as a means for breaking the problem compromises and trade-offs that traditional problem solving techniques take for granted. Each strategy offers a focus for brainstorming. Connect the strategy text description to your problem situation to create paradigm-breaking solutions. The text includes additional solution triggers within each strategy, and a number of examples to show how other problem solvers have successfully used each one.

Principle 1. Segmentation

A. *Divide a system into independent parts.*

- Autonomous profit centres/franchise outlets.
- Use a work breakdown structure for a large project.

B. *Make a system easy to disassemble.*

- Use of temporary workers on short-term projects
- Flexible Manufacturing Systems
- Modular offices/'hot-desking'

C. *Increase the degree of fragmentation or segmentation.*

- 'Segment of one' advertising – mass customization
- Virtual office/remote working

Principle 2. Taking out /Separation

A. *Separate an interfering part or property of a system from the useful parts.*

- Breakdown barriers between departments (Point No.9 of Deming's Fourteen Points).
- Eliminate targets (Point No.11 of Deming's Fourteen Points).
- Drive Out Fear (Point No.8 of Deming's Fourteen Points)
- 'Separate the PEOPLE from the PROBLEM' ('Getting To Yes').
- Smart software learns user preferences and filters out non-useful information.

- Semantic processors used to extract 'knowledge' from text

Principle 3. Local quality

A. Change the structure of a system or its surroundings from uniform to non-uniform to suit local optimum conditions,

- Moves away from rigid salary structures/job grading.
- Skill/personality matching in project teams
- Flexible working hours.
- Treat every customer according to their individual desires
- Customizable software

B. Make each part of a system fulfill a different and useful function.

- Organisational division by function rather than product.
- Staff specialists in centres of excellence
- Position factory or distribution centre near to customers
- Hire local people to acquire cultural knowledge of local customers

Principle 4. Asymmetry

A. Change the symmetrical aspects of a system into asymmetrical ones.

- (Proportionately) more 'Plan' or more 'Study' in the Deming PDSA cycle
- Skewed normal distributions.
- Budget for different departments individually rather than using a constant percentage increase or reduction for all departments
- Theory of Constraints 'Drum, Buffer, Rope' concept

B. If a system is asymmetrical, shift the degree of asymmetry.

- 360° appraisals
- Shift away from calendar-influenced sales bias (e.g. holiday resorts, greetings cards, etc.)
- Honda's 4M – 'man maximum, machine minimum' product design philosophy.

Principle 5. Merging

A. Physically bring closer together (or merge) identical or similar systems.

- Cell-based Manufacture
- Common-interest groups
- Banks, etc offer customers a full range of financial service packages – current, savings, mortgage, pension, etc.
- Merge with companies offering related/synergistic products ('complementors')

B. Make operations contiguous or parallel; bring them together in time.

- Enlisting customer and supplier help in designing the product (Boeing 777 'Working Together Teams')
- Movie/book/soundtrack/Internet/merchandise tie-ins
- Call centres

Principle 6. Universality

A. Make a system perform multiple functions; eliminate the need for other systems.

- Multi-skilling of work-force
- 'One-stop shopping' – supermarkets sell insurance, banking services, fuel, food, etc.
- Rapid Reaction Forces in the military – cross-trained, equipment versatility, etc
- Semco – managerial staff set their own salaries, shop floor workers set their own productivity targets, part of change agent's job is to eliminate need for his/her job
- Industry standards – e.g. communication protocols – HTML/Internet

Principle 7. "Nested Doll"

A. Place one system inside others.

- Store-in-store
- Individual profit centers inside an organisation
- Expose traditionally inward facing job-holders to external events/customers (e.g. engineers shadow marketing people during customer visits)
- Internet 'Navigator' companies

Principle 8. Counter-Weight

A. To compensate for the downward tendency of a system, merge it with other systems or external phenomena that provide an upward effect.

- In a merger of two companies, one 'lifts' the other with whatever its stronger features are (distribution system, marketing, methods, capital, etc)
- Companies increase flagging sales by making connections with other rising products (e.g. movie tie-ins)
- Attach product/service marketing to customer and business driving forces (Megatrends – aging population, desire for flexibility, simplicity, etc)

Principle 9. Prior Counter-Action

A. If it is necessary to perform an action with both harmful and useful effects, this action should be replaced with an opposite action to control harmful effects in advance.

- Customer trials/segmented launch of (high risk) new products (e.g. film companies film several endings to a movie and trial with different audiences before finalising selection)
- Asking to be 'paid to play' during a competitive bid when you are the new player and the customer is looking to get the incumbent to reduce price

B. Create beforehand stresses in a system that will oppose known undesirable working stresses later on.

- Epson product development engineers spend time as sales and then service staff before they are allowed to work on product development activities
- Team-building tasks are done before the real project starts (for example the team spends one week on a special seminar, so that they can learn to work together).
- Negotiate upfront stage payments in a long term contract

Principle 10. Prior Action

A. Perform the required change of a system (either fully or partially) before it is needed.

- Perform non-critical path tasks early (where circumstances permit)
- Use of 'story-boarding' to facilitate creative problem solving
- 'War-gaming' – business evolution modeling' game theory'

B. Pre-arrange systems such that they can come into action from the most convenient place and without losing time for their delivery.

- Kanban arrangements in a Just-In-Time factory
- Cell-based manufacture
- Benetton 'retarded differentiation' – clothing is knitted before it is dyed; colour only applied when the season's popular colours emerge.
- Dealer-fit car accessories – CD player, alloy wheels, air-con, etc.

Principle 11. Prior Cushioning

A. Prepare emergency means beforehand to compensate for the relatively low reliability of a system.

- Contingency planning
- Establish a worst-case, fall-back position prior to negotiation - 'Best Alternative to a Negotiated Agreement'
- Put clauses in contracts requiring arbitration/mediation to avoid litigation

Principle 12. Remove Tension

A. Where harmful tensions may exist, create conditions to compensate, reduce or eliminate them

- Team members distribute their own merit award money (rather than often divisive top-down distribution methods)
- Force-Field Analysis – group discussion of the phrase 'forces push in various directions' – teambuilding/problem-solving technique.
- Single-union agreements
- 'No-fault' termination clauses written into contracts

Principle 13. 'The Other Way Round'

A. Invert the action(s) used to solve the problem.

- Expansion instead of contraction during recession.

- Benchmark against the worst instead of (or at least as well as) the best
- B. *Make movable parts (or the external environment) fixed, and fixed parts movable.*
- Home working
 - Mobile car service – mechanic comes to you rather than you going to garage
 - MBWA – Management By Walking Around
- C. *Turn the object (or process) 'upside down'.*
- Customer-facing staff are the most important part of an organisation
 - Computer help lines were often originally set up with relatively no-technical staff at the front-end, directing calls to progressively more technically able staff the more complicated the problem is. Latest logic suggests reversing this trend – i.e. place the most qualified staff as first point of contact (e.g. IBM)
 - 'Ready, Fire, Aim' – Tom Peters
 - Mercedes Benz vision changed from 'the best or nothing' to 'the best for our customers' – i.e. shift from internal to externally focused vision statement.
 - Corporate 'unlearning' – acquiring the ability to forget about the past where appropriate
 - Chairman of company spends time in the complaints department answering customer complaints
 - 'Nothing fails like success'

Principle 14. Curvature

A. *Turn flat or linear things into curved ones.*

- Circular manufacture cells
- 'Form the wagons into a circle'
- Recognise that the Deming PDSA cycle is circular and that the 'Act' stage feeds into the next 'Plan' stage (e.g. project teams are often disbanded before any 'lessons learned' are recorded)

Principle 15. Dynamization

A. *Allow (or design) the characteristics of a system or process to change to be optimal or to find an optimal operating condition.*

- 'Customer Response Teams'/Rapid Reaction Force
- 'In today's turbulent business environment, there are no hard fast conclusions – only transitions'
- 'Change is the only constant'

B. *Divide a system into elements capable of moving relative to each other.*

- Work teams oriented to achieve same goal, but work at different rates on different objectives
- Conglomerate structures

C. *If a system (or process) is rigid or inflexible, make it movable or adaptive.*

- Changing the supervisor's role; avoid 'whack-a-mole' firefighting
- Flexible organisation structure
- Continuous appraisal systems

Principle 16. Slightly Less/Slightly More

A. *If 100 percent of an objective is hard to achieve then, try to solve the problem by using 'slightly less' or 'slightly more' of the method currently being used*

- Use Pareto analysis to enable work to concentrate on the high return elements.
- Communicate more than you 'have to'.
- Theory of Constraints 'Drum, Buffer, Rope' scheduling method

Principle 17. Another Dimension

A. *If a system uses only one or two dimensions; make use of the unused dimensions.*

- 360° appraisals.
- Multi-dimensional organisation hierarchy charts – 3D (e.g. to show 'hard' and 'soft' relationships), or 4D – to include an element of time or movement ('Buckyball Management')

B. *Use a multi-storey arrangement of systems instead of a single-storey arrangement.*

- Organisational hierarchy
- 'When two people meet, there are really six people present. There is each man as he sees himself, each man as he wants to be seen, and each man as he really is.' Michael De Saintamo

C. *Tilt or re-orient the system, lay it on its side.*

- Horizontal (peer) communication
- Horizontally integrated manufacture
- Switch from vertical to horizontal (lateral) thinking – and vice-versa

Principle 18. Vibration

A. *Cause a system or its parts to oscillate or vibrate.*

- ‘The things we fear most in organizations -- fluctuations, disturbances, imbalances -- are the primary sources of creativity’ Margaret J Wheatley.

B. *Use the resonant frequency of a system and its parts.*

- Find the resonant frequency of work teams and manage to maintain that frequency
- ‘Kansei’ – Japanese term for resonance/one-ness between product and user

Principle 19. Periodic Action

A. *Instead of continuous action, use periodic or time-varying actions.*

- Batch manufacture.
- Change team leadership periodically (e.g. countries take it in turns to ‘lead’ the EU)

B. *If an action is already periodic, change the periodic magnitude or frequency.*

- Use monthly or weekly feedback instead of annual reviews
- Flexible savings schemes paying higher interest rates the fewer the number of withdrawals made

C. *Use pauses between actions to perform a different action.*

- Perform maintenance work during vacations
- 24-hour car service operation – evening pick-up, return of serviced car by breakfast the following morning (customer perspective).

Principle 20. Continuity of Useful Action

A. *Carry on work continuously; make all parts of a system work at full load, all the time.*

- Run the bottleneck operations in a factory continuously, to reach the optimum pace.
- Continuous on-line monitoring of elevators by Otis – total maintenance responsibility
- 24 hour car service operation – evening pick-up, return of serviced car by breakfast the following morning (garage perspective)

B. *Eliminate all idle or intermittent actions or work.*

- 24hour shift patterns
- ‘Hot-till’ing in supermarkets – staff do other tasks during quiet periods; move to tills when they see queues developing
- ‘Life-long learning’

Principle 21. Hurrying

A. *Conduct a process, or certain stages (e.g. destructible, harmful or hazardous operations) at high speed.*

- ‘Don’t be afraid to take a big step if one is indicated. You can’t cross a chasm in two small jumps’ David Lloyd George
- Do not let painful processes drag on – act decisively and quickly (e.g. firing someone)
- Rapid prototyping

Principle 22. "Blessing in Disguise" or "Turn Lemons into Lemonade"

A. *Use harmful factors (particularly, harmful effects of the environment or surroundings) to achieve a positive effect.*

- Recast an attack on you as an attack on the problem.
- Making a fuss over customers who have experienced a problem with your goods/services/etc, tends to re-enforce their overall positive feel about you – to a level greater than that where no problem had occurred.
- Turn contract negotiations into win-win situations – see a drive to reduce price as an opportunity to negotiate longer term or ‘last-look’ options

B. *Eliminate a primary harmful action by adding it to another harmful action to resolve the problem.*

- Eliminate fear of change by introducing fear of competition
- Use of ‘constructed crisis’ as a means of facilitating change.
- Loss-leader strategy for increasing sales

C. *Amplify a harmful factor to such a degree that it is no longer harmful.*

- Reduce resourcing levels to such an extent that new ways of doing the job have to be discovered
- Restrict supply of goods to create scarcity value (e.g. some sports car manufacturers seek to maintain a multiple year waiting list on vehicles)

Principle 23. Feedback

A. Introduce feedback (referring back, cross-checking) to improve a process or action.

- Statistical Process Control
- Enlist customers in the design process.
- 'Extranets'
- 'Active Transition Management' as a way of controlling product development process between research, development and production phases.
- (Supermarket) loyalty cards – provide customer shopping profile information

B. If feedback is already used, change its magnitude or influence.

- Expose designers as well as marketers to customers
- Multi-Criteria Decision Analysis (valid 'apples and oranges' comparisons).
- Toshiba medical systems division split into R&D, Engineering and Manufacture sectors. As a product is being developed, key personnel and leadership physically move from one sector to another to actively manage transitions between product development stages.
- 'Co-evolutionary marketing' – e.g. Amazon.com invites readers to write on-line book reviews; other readers often prefer these views to professional reviewer evaluations, therefore people visit the site more often

Principle 24. 'Intermediary'

A. Use an intermediary system or intermediary process.

- Use of impartial body during difficult negotiation (e.g. ACAS)
- Sub-contract non-core business (e.g. cleaning services, transport)
- Franchisee acts as intermediary between corporate vision and customer
- UPS distribution system using core sorting centre.
- KLM 'feeder' airline concept – short flights from Germany, England pull passengers away from national airlines in order that they fly long distances using Holland as a hub

B. Merge one object temporarily with another (which can be easily removed).

- Introduction of specialist trouble-shooting or fire-fighting teams
- Hire consultant.
- Use bridging loan arrangements to help cash flow

Principle 25. Self-service

A. Make a system serve itself by performing auxiliary helpful functions

- Quality Circles
- Brand image circularity – Harvard Business School produces bright people; these people enhance the School's reputation; hence lots of people apply; hence they only take on very bright people; bright people in equals bright people out; and so the circle re-enforces itself.
- 'Cookies' on the Internet gather data useful for future marketing activities, while performing a useful service for the 'surfer'
- Bar-codes in supermarkets provide instant pricing information, but the system also gathers information to assist future marketing decisions

B. Use waste (or lost) resources.

- Re-hire retired workers for jobs where their experience is needed
- Loan out temporarily under-utilised workers to other organisations (load-capacity balancing across companies – e.g. footballers – win-win situation; the player stays match fit, the loaner saves wages, the loanee fills skill shortage)
- 'Industrial eco-systems'
- 'Brown-field' developments
- Body Shop re-cycles used containers returned by customers – promoting corporate green image

Principle 26. Copying

A. Instead of unavailable, expensive, fragile resources, use simpler, inexpensive copies.

- Virtual models – e.g. economic, market, etc.
- Scan rare, historic books, documents, etc so they are accessible to all and the original remains protected
- 'Mystery shoppers' catch problems before the real customers are exposed to them

B. Replace a system or process with virtual copies.

- Virtual product service manuals.
- Flight simulator reduces pilot training costs.

- Video-conferencing instead of physical travel
- Use a central electronic database instead of paper records in cases where multiple users would benefit from simultaneous access to data – e.g. medical records, customer data, engineering drawings, etc
- Keep personal calendars on a web-site so it can be accessed remotely, and can't get lost

Principle 27. Cheap Disposable

A. Replace an expensive system with a multitude of inexpensive, disposable systems.

- Disposable cameras, mobile phones, etc
- 'Disposable organisation structures' in rapidly changing markets – e.g. little point in massively optimising structures in e-commerce businesses which are still in a state of rapid evolution.

Principle 28 Another Sense

A. Replace or supplement one sensory means with another (optical, acoustic, taste, touch or smell)

- CEO of budget motel chain; 'our goal is that when you turn out the lights and climb into bed, you think you are at the Hilton'
- Multi-media presentations
- Learning by listening, seeing and doing
- Supermarkets pump bakery odours around the store to help advertise bread products

Principle 29. Fluidity

A. Make fixed things into 'fluid' things.

- 'Water logic' versus 'rock logic' – fluid, flowing, gradually building up logic versus permanent, hard-edged, rock-like alternatives
- Flexible (fluid) organisation structure versus old fixed hierarchical structures
- Organisations traditionally viewed as 'competitors' may become collaborators on certain projects – this is happening increasingly in the aerospace industry; which now has a much more fluid approach to who works with whom.

Principle 30. Thin and Flexible

A. Recognise that very often only the edges and surfaces of a system is able to perform a useful function – and hence increase the amount of edge and surface

- The thinnest organisation structure is one employee thick. Get faster customer service by having a service agent have all the necessary data easily available, so the customer only deals with the single, flexible 'shell' of the organization and not the whole bulky volume.
- 'We like to delegate and leave people as free as possible, so we try to push management decisions down the line. We run Rolls-Royce with a very thin corporate structure', Lord Tombs of Brailles, ex-Chairman of Rolls-Royce

Principle 31. Holes

A. Add holes and spaces into systems and interactions.

- Introduction of 'breathing spaces' or 'get-out' clauses into contracts
- Neutral and/or buffer zones.

B. Add something else into the holes or spaces.

- Rent (temporarily) unused office/storage space
- High value niche products to fill gaps in a market sector

Principle 32. Colour Changes

A. Change the colour of things in a system or the external environment.

- Red/Blue proposal preparation teams
- Use of lighting effects to change mood in a room or office
- Use colours to communicate state of alert (green, black, amber, red, etc)

B. Change the transparency of a system or its external environment.

- 'Transparent' organisations
- Transparent communications
- Smoke-screen/mis-information to disguise confidential R&D etc activities

Principle 33. Homogeneity

A. *Make systems interact with other similar systems (ones with identical properties).*

- Co-located project teams and the concept of internal customers
- Product branding/product families
- Boeing 'Working Together Teams' – bring customers and suppliers into design loop.
- Common data transfer protocols between different organisations

Principle 34. Discarding and Recovering

A. *Make portions of a system that have fulfilled their functions go away or modify them directly during operation.*

- Flexible, variable-sized project teams
- Load/capacity balance using contract labour or consultants
- Contract hire of specialised equipment/facilities, etc

B. *Conversely, restore consumable parts of an object directly in operation.*

- Periodically re-energise continuous improvement initiatives ('enthusiasm injections')
- Life-long learning (where individuals are given responsibility for managing their own personal continuing education, ensuring skills remain up to date)

Principle 35. Parameter Changes

A. *Change the physical state of a system.*

- Virtual prototyping
- Numerical simulation
- Virtual shopping – e.g. Amazon.com

B. *Change the internal structure of the system.*

- Change the team structure (e.g. football teams use substitutes)

C. *Change the degree of flexibility of the system.*

- Introduce intelligence into on-line catalogues (e.g. first generation catalogues were replicas of previous paper versions, latest generation incorporate search engines, expert systems, etc)
- Software with options for 'beginner' through to 'expert' usage
- Moves away from fixed clothing size partitions – e.g. 'Personal Pairs' - a customer at a participating store chooses which fabric he/she wants, and is measured. Those measurements are transmitted instantly to a Levi's plant in Tennessee where the data controls a laser cutter.

D. *Change other parameters.*

- Get customers excited about the product by giving them ownership of the change
- Get employees excited about the future of the company by using full involvement strategic planning, or stock options, or... etc.

Principle 36. Phase Transitions

A. *Use phenomena occurring during macro-scale business/market change phenomena*

- Awareness of the requirements of different stages – conception, birth, development, maturity, retirement – of a project (e.g. shifting manpower and budget requirements).
- Take account of transition from a 'bull' to a 'bear' market.
- Counter the tendency to relax after receiving a Quality Award, Innovation Award, etc.
- Forming/storming/norming/performing phases of team development – e.g. take advantage of enthusiasm dip during storming-norming

Principle 37. Relative Change

A. *Use the relative differences that exist within and around a system to do something useful*

- Creative tension – some organisations employ two independent teams to develop a new product or process, and then compete them. This is often done using one team constructed along 'traditional' lines, and the other using a smaller number of 'maverick' types; ones that don't fit well into traditional structures.
- Personality matching on work-teams

B. *Make different parts of a system act differently in response to changes*

- Expand or contract marketing efforts depending on the product's rate of sales and profitability.
- Combination of high risk and high-stability investment strategies during market turbulence.
- Pincer movement during war-gaming
- Creation of off-shoot companies to better exploit new product developments

Principle 38. Enriched Atmosphere

A. Replace a normal atmosphere with an enriched one

- Risk and Revenue Sharing Partnerships
- Guest speakers at a seminar
- Use simulations/games instead of lecture-style training
- Injection of new-blood/new challenge into a team
- South West Airlines POS – Positively Outrageous Service

B. Replace an enriched atmosphere with a highly enriched one.

- Corporate Jester
- ‘Devil’s Advocate’
- ‘I like Bartok and Stravinsky. It’s a discordant sound and there are discordant sounds inside a company. As president you must orchestrate the discordant sounds into a kind of harmony. But you never want too much harmony. One must cultivate a taste for finding harmony within discord or you will drift away from the forces that keep a company alive’ Takeo Fujisawa, Honda.

Principle 39. Calm Atmosphere

A. Replace a normal environment with an inert one.

- Moves away from the (normal) disruptive performance appraisal, merit award, and reward environment to an (emotionally neutral) more fair system of working practice
- Time-out during negotiation
- ‘Away-day’ s/ team-building days
- Operations Room for planning change, proposal submissions, contract tendering, etc.

B. Add neutral parts, or inert elements to a system.

- Use of neutral third parties during difficult negotiations
- Introduction of ‘quiet areas’ into the workplace.

Principle 40. Composite Structures

A. Change from uniform to composite (multiple) structures, be aware of and utilise combinations of different skills and capabilities.)

- Multi-disciplinary project teams.
- Employ different personality types (e.g. Myers-Briggs) on a team
- ‘Small is beautiful’ – appreciation for diverse, interconnected systems
- Mix of thinking skills in a project team