Designing Cooperative Organizations for a Sustainable Future – The PDW Approach

An AMERIN Briefing Paper for STS Roundtable webinar participants

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This briefing paper provides comprehensive supporting information for participants of the STS Roundtable webinar on how to design system-wide cooperative organizations for a sustainable future by applying a participative STS method known as the Participative Design Workshop (PDW).

During the webinar presentation, participants were introduced to the 2nd organizational design principle that creates system-wide cooperation for continuous adaption and innovation. This capability and from decades of social science research and our own experience demonstrates that the 2nd organizational design principle is a key design prerequisite for organizations endeavouring to remain viable and proposer in today's highly uncertain environment.

The topics that were discussed during the presentation include those in the following 'Table of Contents'. Because of webinar time constraints however, some topics were not addressed in detail. This briefing paper provides more thorough information on each topic to help you make an informed decision about whether your organization should consider changing its organization design principles.

Table of Contents

The content for this briefing paper has been extracted from the AMERIN Cooperative Workplaces by Design (CWD) Handbook, which is provided to clients when they change their organizational design principle from Design Principle 1 (i.e., bureaucratic, command and control organizations) to Design Principle 2 (i.e., democratic, team-based entities).

As highlighted in the presentation, Design Principle 2 (DP2) businesses are designed to produce system-wide cooperative workplaces that improve innovation and productivity while operating in highly uncertain environments.

The CWD Handbook sets out the structure and content of a participative socio-technical systems (STS) redesign methodology, which has been translated from open systems theory, for changing organizational design principles. It is known as the Participative Design Workshop (PDW) and was pioneered and developed by Australian management theorists, Professors Fred and Merrelyn Emery.

The CWD Handbook is a reference for those responsible for designing, implementing, and sustaining DP2 businesses. It also contains experiential insights on how to approach organizational change, critical success factors, team guiding principles, and a how to design and run a Participative Design Workshops for any type of business – from SMEs to global corporations.

Organizations as Open Systems

Before COVID-19, businesses already had to deal with a very uncertain environment. Some of the social vectors and trends creating this uncertainty are highlighted on the RHS of the following 'Organizations as open systems' diagram.
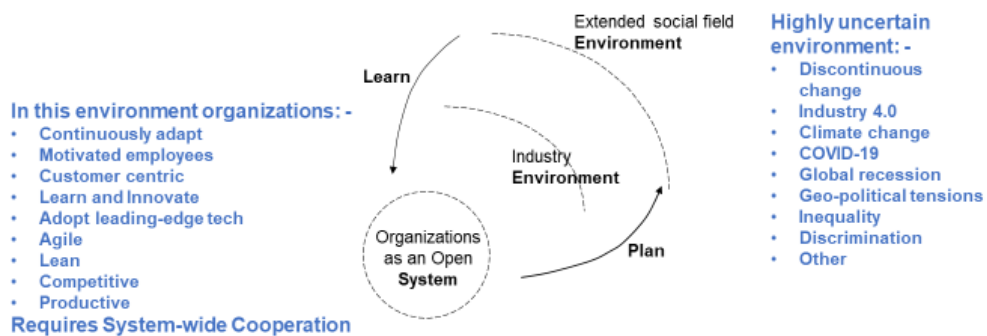
As COVID-19 pandemic closed boarders and locked down communities and organizations, CEOs talked about the impact of the pandemic on their businesses, employees, and customers. Many have said that we must make fundamental changes to survive. They used adjectives like adaption, agile, innovative, and so on as listed on the LHS of 'Organizations as open systems' diagram.

In early July, the CEO of Qantas, Alan Joyce said Qantas has become smaller business so we must become leaner to remain competitive, but at the same time still provide excellent customer service.

These statements and others like them highlight that all organizations are open, not closed systems – they are open to the changes taking place in their environments.

The diagram in the middle of the above 'Organizations as open systems' diagram is from a body of knowledge known as Open Systems Theory (OST). (Fred Emery was one of the original players involved in its development and continued researching and improving it until his death in 1997. Today, Merrelyn Emery continues OST research and development. She is making available Fred's and her published and unpublished paper at www.socialsciencethatactuallyworks.com)

OST maintains that to remain viable and prosper in uncertain environments, organizations must have an open and active adaptive relationship with their environments over time.

The diagram shows that as organizations conduct their business (execute plans), they influence and change their external environments, while at the same time being influenced by external changes (scan & learn) in their social and industry environments.

In high levels of uncertainty, organizations must continually scan & learn about their environments and develop 'active adaptive strategic plans.' That is, plans must be able to adapt to rapidly changing environments, as well as actively influence their environments for a more desirable future.

(This presentation assumes 'active adaptive strategic plans' have been developed. If not, we recommend conducting a Search Conference, which is a large group participative strategic planning methodology translated from OST.)

To execute 'active adaptive strategic plans', organizations must be designed for continuous adaption, which requires system-wide cooperation.

The presentation outlines why the DESIGN PRINCIPLE 2 organizational structure is a prerequisite for creating Cooperative Workplaces that continuously adapt.

Presentation aims

This aim of the presentation was to introduce you to:

- The organizational design principles
- A participative STS method for changing organizational design principles
- How the design principles affect intrinsic motivation, cooperation, mental health, and productivity
- Performance improvement examples from changing organizational design principles
- Planning and preparation steps to change organizational design principles

The first step in creating a system-wide cooperative workplace is to ensure organizations are meeting people's basic human needs of work. To do so, we measure the Intrinsic Motivators.

The Intrinsic Motivators

The PDW provides management and employees with the tools and concepts to redesign their organizational structure to improve cooperation, innovation and productivity.

The first task in a PDW is to determine the level of employee Intrinsic Motivation. We do this by measuring the 6 basic human needs of work, which are described here and are depicted in the following 'Intrinsic Motivators' diagram.

<u>Personal needs of work</u> (factors that vary from person to person)

1. Elbow Room - autonomy in decision making
2. Continual learning, which involves some room to set personal goals or challenges and getting accurate and timely feedback
3. Variety

<u>Workplace climate</u> (factors that people can never have too much of)

4. Mutual support and respect; helping out and being helped out by others without request. A crucial feature when designing DP2 self-managing groups is that it only supports *cooperative efforts*, not *competitive work goals*. MS&R is an accurate measure of cooperation and teamwork.
5. Meaningfulness, which consists of doing something that our society values, and being able to see your contribution to a whole product or service
6. A desirable future, not having a dead-end job

Intrinsic Motivators
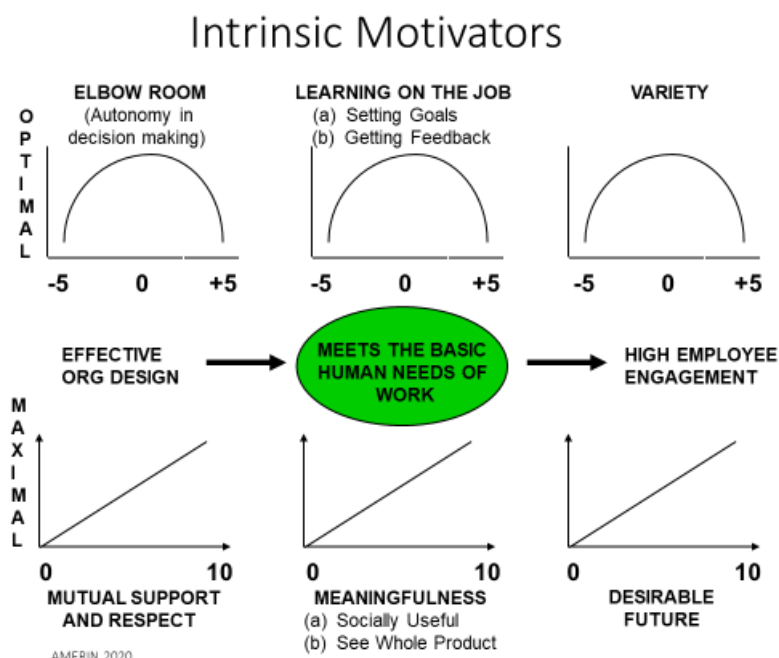
These basic human needs of work must be present if people are to engage in productive work and establish a system-wide cooperative workplace.

Our evidence of measuring the Intrinsic Motivators and nearly sixty years of social science research consistently highlights that most organizations fail to meet people's basic needs of work. This lack of motivation shows up as:

- Low cooperation
- Low innovation, quality and productivity
- Turnover and absenteeism, and
- Poor mental health

And in today's hyper uncertain environment, where change is happening in real time, ALL employees must be motivated to ensure businesses remains viable.

To understand why organizations fail to provide Intrinsic Motivation, we need to go back to the basics of organizational design.

Design Principle 1

DP1 produces the bureaucratic structure or bureaucracy. Most organizations are designed this way.

Two key features of DP1 are:

1. DP1 is a redundancy of parts model and
2. Control & coordination of work lies at least one level where the works being done.

As the following diagram shows, a key feature of DP1 is redundancy of parts. This simply means that whole tasks such as assembling a product, are broken down into narrow discrete jobs with minimal requirements for knowledge, skill and, therefore, training.
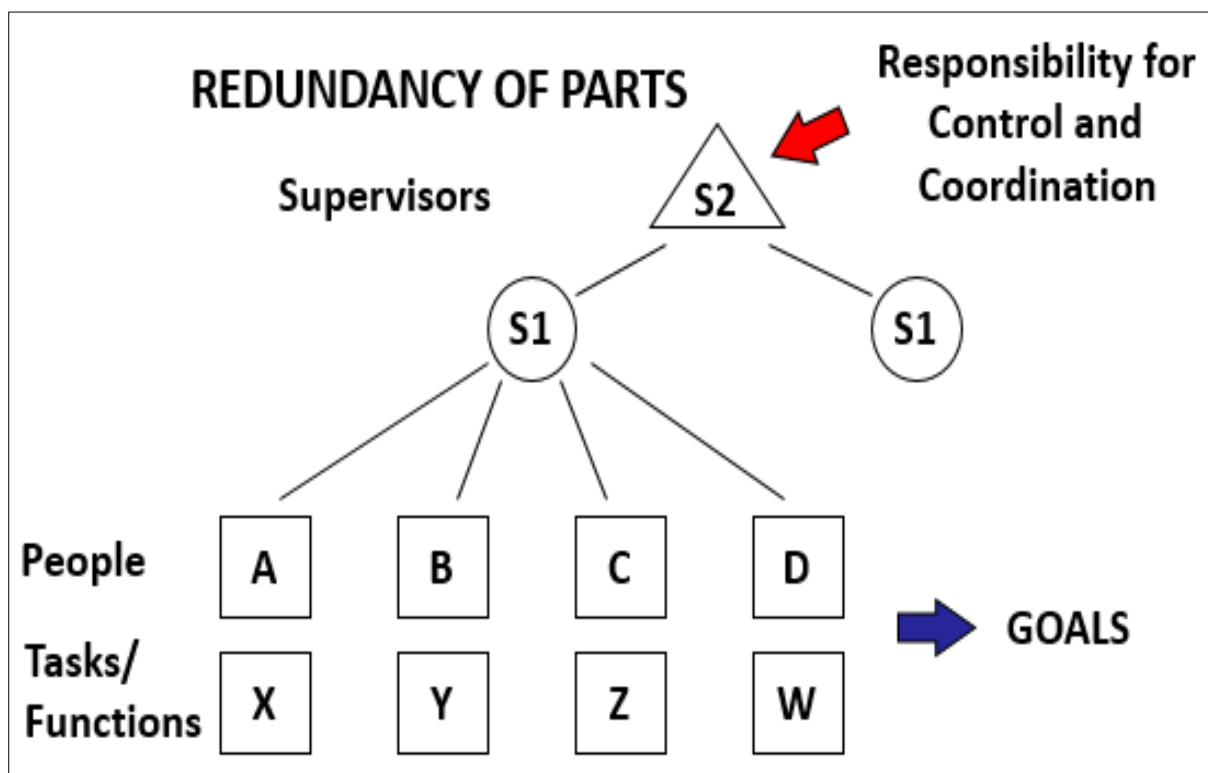
By making jobs narrow and breaking them down into the minimum number of skills, management can easily replace employees when they leave the organization. Also, the fewer skills required in a job means that training is minimised and the less the boss must pay for labour.

The redundancy of parts model enables DP1 organizations to behave flexibly because there are more parts (jobs/people) in the system than is required. When one "part" fails, another takes over. These parts are like replaceable cogs in a machine.

Today, many of these low skilled jobs are performed by casuals or contractors. It has resulted in the casualization of the workforce and the emergence of the gig economy, which creates risks for organizations, economies, and community members. The COVID-19 pandemic has exposed societies around the world to health and economic risks as casual workers, who became infected from community transmission, continued to go to work while sick because of their insecure jobs.

To control and coordinate permanent employees with narrow jobs that have minimum skills requires maximum specifications through tightly controlled job descriptions. Highly specified jobs make life difficult for the supervisor when he/she tries to coordinate people to improve productivity. People say: "That's not in my job description".

For example, if a production operator's (1st part) machine breakdowns, he/she would notify their supervisor (2nd part), The production supervisor would discuss the problem with relevant maintenance supervisor (3rd part) and this person would tell a fitter/electrician (4th part) to go fix the problem, if they have time.

The redundancy of parts model is actually a de-skilling model where people start to lose skills or are not permitted to use any technical or social skills they could have offered to their employer.

The basic building block of the DP1 bureaucratic structure is an immediate boss (supervisor or manager) with several people reporting upwards to him or her. But each boss has another boss above them all the way to the top producing the Command and Control structure we are all familiar with.

In this structure the boss has the right and responsibility to control what must be done, what standards have to be met, and the specific objectives each employee must achieve. The boss also coordinates the work to be done in his or her section. That is, the boss determines who will work with whom to ensure the section's goals are met. In this DP1 diagram S1 is responsible for meeting the section goals.

Thus, the *critical feature* of a DP1 bureaucratic structure is that responsibility for control and coordination is located at least one level above where the work is being done.

The right and responsibility of the boss to tell subordinates what to do and how to do it is defines the relationship as one of personal dominance, master-servant. *Superior and subordinates have by definition unequal status.*

This pattern of personal dominance, controlling and coordinating subordinates' work and managing, monitoring, and resourcing the one-to-one relationships is repeated from the bottom to the top of an organization. It results in a dominant hierarchy of authority. It has been the main way organizations have been designed since the start of the industrial revolution over 200 years ago, when external environments were much more stable than today.

Analysis of the DP1 model highlights the fact that it induces internal *competition*, not *cooperation*, because "A", "B", "C" and "D" are competing for "S1" position. In this hierarchy there is only one position for promotion.

The critical impact of this internal competition is 'communication'. It is not in people's interest to communicate to each other about work because collectively they don't own 'the goals'.

The internal competition is not only across workplace levels (between "A" and "B", etc), but also between levels (between "S1" and "A", "B", "C" and "D"). Therefore, communication is poor - both horizontally and vertically, in a DP1 structure.

Poor communication from induced competition results in error amplification. As Fred Emery identified in his 1977 book titled 'Futures We're In', "It is not in an employee's interest to pass up the chain of command any errors that the business should address and learn from but could make an individual appear as a failure in the eyes of a superior."

The nature of the DP1 structure ensures that it is almost impossible to get good scores on the 6 criteria, the intrinsic motivators.

Elbow room, autonomy for decision making: if the boss is doing their job properly and making all the decision about how and when work should be done, there are virtually no decisions left for the subordinates to make. They are supposed to just do as they are told.

Continuous learning: again, if the boss is doing their job properly there is little room for people to set goals and, therefore, challenges for themselves. Superiors typically underestimate their subordinates so the goals they set for their underlings are not challenging. And as mentioned above, DP1 induces competition between peers for promotion. Competition therefore destroys the potential for accurate and timely feedback as it is not in a subordinate's interest to correct another's mistake.

Variety: when a person is stuck doing their job X and only X, there is little variety. Boredom is inevitable and we often find over 30% saying they are frequently or constantly bored at work and another 40% who are bored sometimes.

Mutual support and respect: competition affects this factor in the same way as it affects feedback. This is particularly unfortunate for those suffering genuine problems as they are often ignored if not ostracized. There can also be little respect when everyone is trying to be the brightest, the strongest or the boss's favourite.

Meaningfulness: when people have no control over the work they do and no involvement in the direction of the organization more generally, they have no chance to improve the social value of their work. Also, when they are stuck doing X which produces part of a small component, they often do not know what the component is or what it is used in.

Desirable future: there is little opportunity in many DP1 structures to increase skills and knowledge when working in narrow fragmented jobs. And consider the case of skilled tradespeople who get stuck doing just X or Y. What happens to the skills they came in with? The rule is 'use it or lose it'. Bureaucracies are inherently deskilling.

Thousands of intrinsic motivator surveys have been conducted over the last 50 years and in many countries. Time and time again employees, especially frontline employees who have little control over their work, score poorly when they work for DP1 bureaucracies.

Even when management has gone out of its way to improve the hygiene factors or external motivators (such as pay), the Intrinsic Motivator scores remain low. For example, the following Intrinsic Motivator scores are from employees working in a DP1 manufacturing plant that was about to close its doors because it couldn't compete with low cost imports from China.

Results of an AMERIN PDW organizational assessment of a small manufacturing plant (N = 68)

Intrinsic Motivators (personal needs of work)

	Variety	Elbow room	Setting goals
Too little	60%	63	65
Just right	30	34	32
Too much	10	3	3

Intrinsic Motivators (work climate)

	Desirable future	Mutual support and respect	See whole product
Below average	57%	41	38
Average	19	24	22
Above average	24	35	40

With poor scores like these, it wasn't in the interests of employees to work together to improve plant productivity. Self-interest was their main priority.

Finally, the above analysis is a reminder that there are significant in-built tangible and intangible costs required to maintain a DP1 organizational structure. They include:

- The structure de-motivates and de-skills employees. This outcome is a main reason why high employee engagement scores in DP1 organizations are only around 30% and why absenteeism and turnover typically remain high. To mitigate these outcomes, costly and unsustainable training programs are rolled out.

- DP1 is a mechanistic model where employees are treated as replaceable parts/cogs in a machine and internal competition for jobs is high. This leads to people looking after their own interests first, not the organization's, which leads to low cooperation and innovation.

- Induced internal competition also leads to poor communication; that is, where people only communicate what's of benefit to them. It results in error amplification that requires costly rules and procedures, and in some instances, costly surveillance systems.

- The DP1 organizational structure produces the group dynamics of dependency (waiting for S1 to give instructions) and fight/flight (actively or passively questioning S1's authority). It leads to time wasting, or worse, costly industrial disputes.

- As mentioned earlier, DP1 is a pattern of personal dominance, controlling and coordinating subordinates' work and managing, monitoring, and resourcing the one-to-one relationships from the bottom to the top of an organization. Managing and monitoring those relationships requires the costly maintenance of ineffective performance appraisal programs.

- Finally, our mental health in the workplace research clearly shows that DP1 structures generates low intrinsic motivation, low trust, low intellectual satisfaction, poor mental health outcomes and low productivity. A reference for this research is in the Appendix.

These inherent costs are an unnecessary impediment on performance. They make it quite difficult for some organizations to remain viable as external business environments increasingly become more competitive and unpredictable. It is especially difficult for these organizations to continuously adapt in today's rapidly changing environment where real-time change is the 'new normal'.

This brief analysis shows that DP1 structures, bureaucracies, de-motivate and de-skill employees, which is an unsustainable situation in the current health and economic crisis and as energy and

water costs dramatically increase, let alone the level of innovation that's required to remain competitive. It isn't empty rhetoric to say that employees are our most important resource – organizations really do rely on their people to cooperate to deliver high quality and productivity. People who are angry, frustrated, bored and generally turned off do not deliver competitive outcomes. They no longer care about the organization and its goals.

To create a culture where it is in people's interest to cooperate and help meet business goals requires a change in Design Principle – from DP1 to DP2.

Design Principle 2

A second way of building redundancy into an organization so it can be flexible and adaptive is by adding redundant functions/skills. It is known as the redundancy of functions model and results in the DP2 organizational structure.

In DP2 organizations there is more skill and knowledge built into each part / person than that person can use at any one point in time.
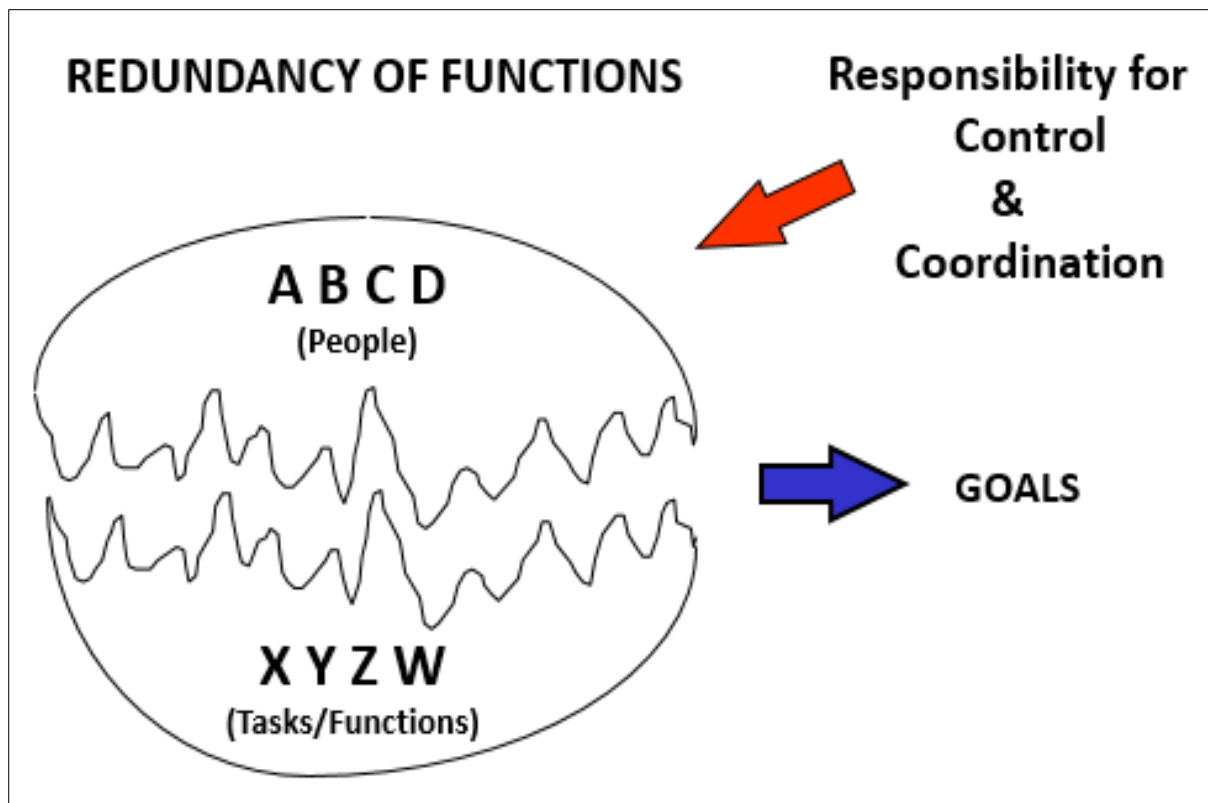
The basic building block of a DP2 organization is a group taking responsibility for its own coordination and control - the self-managing group (SMG), where members are collectively responsible for meeting agreed goals.

As highlighted in the above DP2 diagram, control and coordination (the two dimensions of human work) of the tasks "X, Y, Z & W" are located with the people "A, B, C & D". The goals of the section's overall performance are now the responsibility of "A, B, C, & D".

"A, B, C & D" determine the best mix of multi-skilling (i.e. - "X", "XY", "XYZ", etc) to efficiently and effectively meet the goals of the group.

In the previous DP1 production breakdown example, we described that were 4 parts (people) with separate job descriptions involved in fixing part 1's broken down machine.

In DP2, a self-managing group of production operators holds all the essential skills to keep the production line operating at the output and efficiency rate specified in their agreed goals. Those operators (usually the ones who are keen to move along a maintenance career path) hold sufficient breakdown maintenance skills to help the group meet its production goals.

Whereas DP1 is an autocratic or bureaucratic organization with a master/servant relationship, DP2 is called a democratic organization, with a relationship of *cooperation*.

In terms of the work, a group performs a whole task where the whole task is a complete product or service or a major component of it. In DP2, rather than a boss setting goals for each individual and the section, the group is accountable for meeting a comprehensive set of measurable goals which they have negotiated and agreed with management.

It's important note that self-managing groups are not autonomous. They can't do what they like. Along with existing company policies and procedures, an agreed set of goals controls the work of the group. Therefore, it is necessary that there is a goal for each dimension of a group's work, not just production or output goals.

The *critical feature* of DP2 is that responsibility for control and coordination is located with the people doing the work, that is, with the group. The groups control and coordinate their own work and themselves. This is quite different from DP1, the bureaucracy, where the boss is responsible and accountable for controlling and coordinating the work of subordinates.

When an organisation transforms from DP1 to DP2, former supervisors generally become part of a self-managing group providing support and training to the operational / frontline groups, or they work on future developments such as projects to reduce the organisation's carbon footprint. They do not get involved in the day to day work of operational self-managing groups. They as a group have their own productive work to do.

The basic structural unit of a DP2 organization is the self-managing group and it is repeated from the bottom to the top of the organization. DP2 organizations that consist of self-managing groups at all levels are called non-dominant hierarchies of function.

Relations between groups at whatever level are all conducted as negotiations between peers, equals. This means change can be initiated from any point in any organisation.

The structure induces cooperation rather than competition. When people work in groups to meet their group goals, it is in their interests to cooperate and communicate effectively to make the group look as good as possible. No group wants to fail.

Under these conditions, all the problems and inbuilt costs that arise from the competitive behaviours caused by the DP1 bureaucratic structure are not present.

For example, an organization (as an open system) becomes error attenuating because as employees coordinate their work to achieve their group goals, it's in their interest to address and learn from errors as they come into the system. "Error is coped with by continuous learning and rearrangement of functions." ('Futures We're In', Emery, F. 1977). Emery also points out that self-managing group members will check with each other as to the quality of advice they give to the next hierarchy of

function (i.e. middle management or executive management) to help diffuse learning/knowledge across the organization to improve performance.

Self-managing group members will often need to incorporate external skills / functions into their team. This is necessary when employees don't get enough variety from multi-skilling within say, an operational team. For example, in a production team, employee variety needs are not met by simply training someone to operate machines 1, 2, and 3. The skills are often too similar.

When self-managing group members organise their mutual support to cope with task variation of individual members, they must also share the tasks of monitoring and controlling the contributions of their own members.

In fact, a DP2 structure is more tightly controlled than DP1 because you have the "eyes" of "A, B, C and D" monitoring your performance, rather than just "S1". Each person is responsible to help achieve the goals of the section.

Frontline operational self-managing groups must also build strong links between other groups, support groups and management groups. DP2 requires system-wide cooperation if agreed self-managing group goals and targets are to be met.

Employees' basic human needs of work, the intrinsic motivators, improve dramatically when they work in self-managing groups:

Elbow room: all the decisions previously made by the immediate boss are now available to the group. People who like making decisions have many to make. People who prefer to hang back can do so.

Continuous learning: when the group discusses who is to do what, members participate to ensure they get the challenges they need to learn. For example, if a worker does not want to move up a career path and prefers to do simpler jobs then group members can arrange for this to happen. On the other hand, for those who want to take on more challenging tasks that will help meet group goals then the members can plan their work for this outcome too. And as people are now cooperating to achieve their goals, it is in their interests to give each other accurate and timely feedback.

Variety: All the narrow jobs included in the group's task are now available to all members.

In general, self-managing groups work flexibly so their members each get the right amount of decision making, learning and variety.

Mutual support and respect: as the structure produces cooperation, so it also produces mutual support and respect. It is now in everybody's interest to look after and help each other out. In self-managing groups, members are valued for their contribution and are not treated as replaceable cogs in a machine.

Meaningfulness: as people are actively participating to ensure an adaptive direction for the organisation, they have opportunities to improve the social value of their work. Group members also understand their contribution to a whole product or service because the self-managing group is responsible for a whole task.

Desirable future: group members can now learn all of the skills and knowledge encompassed in the previously fragmented narrow jobs. In DP2 structures the only way to pay people fairly is to move to a competency-based pay system, which provides career paths that supports personal development

and underpins group goal attainment. To advance along competency-based career path, an individual must demonstrate that he/she holds a particular unit of competency – that is, a distinct knowledge set or can apply a particular skill pertaining to a pay level. In this type of remuneration system, employees are not paid for doing a job, but for the knowledge and skill they hold to help their self-managing group meet its goals.

It's important to note that when transforming from DP1 to DP2, there should not be any significant change in the total remuneration budget. In a DP1 redundancy of parts model, there are more employees being paid to do narrow, low-skilled jobs. In the DP2 redundancy of functions model, there are fewer employees being paid to do higher skilled tasks.

Before changing organizational design principles from DP1 to DP2, management and employees (and unions), must be fully briefed on a competency-based remuneration program that underpins DP2. They must understand that because DP2 is a redundancy of functions model, the pay system must be one of "paid for the business knowledge and skills held" if employees are going to acquire the essential skills required to meet team goals.

At the end of the day, people are not going to learn new capabilities / skill & knowledge unless there is something in it for them. Therefore, during a PDW, participants, unions, and if required, the Fair Work / IR Commission, must start working on a pay for skills / competency-based career path system.

This payment system involves having essential skill & knowledge broad banded into a negotiated career path structure. In a frontline self-managing group, there are typically between 4 to 6 broad-banded competency levels and it should take an employee about 4 years to "top out" – that is, to move from level 1 to level 6.

A DP2 organization that creates the conditions for the development of a highly skilled workforce will be in a competitive position to realize value from digital transformations. For example, it will be able to quickly exploit emerging opportunities from Artificial Intelligence (AI) and Machine Learning (ML) technologies. This technology is transforming businesses and creating new business models to such an extent that we are now in an era known as the Fourth Industrial Revolution or Industry 4.0. In this era, we'll witness:

- AI/ML coming to every business sector and affecting every job
- AI/ML development advancing so quickly it can't be ignored, and
- AI/ML organizations gaining such a significant competitive advantage they'll leave their slow-moving rivals behind.

DP2 organizations with a competency-based remuneration program in place, have a framework to readily incorporate AI/ML capability-based career paths. This will encourage the development of AI/ML capability and facilitate the attraction of tech-savvy personnel who embrace Industry 4.0 technology.

The level of AI/ML capability required by self-managing groups will depend on their goals that have to be met. However, having a workforce even with a level 1 AI/ML competency; that is, a working knowledge of AI/ML technology, will help identify smart technology opportunities when self-managing group members conduct workflow analysis to help improve performance.

This type of analysis, sometimes known as high-level technical systems analysis, is an important step in the PDW. During a PDW, participants map the flow of work along a whole task – from inputs to

outputs. This analysis can indicate where key decisions are made or critical errors can occur (such as quality checks, prioritisation of work, raw materials used, and so on) that impede performance. Employees with a working of knowledge of AI/ML will be able to identify smart tech (AI/ML) opportunities during this step to help improve the customer experience, competitiveness, and productivity.

In contrast, DP1 organisations are not designed for competency-based remuneration programs. When Australian industrial awards were restructured in the 1980's / 1990's, competency-based remuneration programs were also developed. Employees were encouraged to learn new skills, such as TQM/JIT tools and techniques to help improve quality and reduce waste. However, in many situations, employees were prohibited from using these newly acquired skills because it wasn't in their job descriptions. Also, employees were reluctant to improve productivity using newly acquired performance improvement skills if it meant a reduction in their overtime wage.

Attempting to incorporate competency-based pay system in a DP1 organization will not generate a return on the training investment. Worse still, it can lead to industrial disputes when management demand employees apply the skills learnt in expensive training programs. Employees would say, "that's not in my job description."

With respect to performance monitoring, and as mentioned earlier, a self-managing group is accountable for meeting a negotiated and an agreed set of comprehensive measurable goals.

When agreed goals are in place, each group monitors its own performance as a matter of course so it knows how it is going. It is extremely rare for a group not to have met its goals by the end of the reporting period. If a group realizes it won't meet one of its goals, it automatically analyses why. If different conditions or quality of supplies are required for example, the group will sit down with the relevant support or resource group to discuss their problem to help sort it out. This may involve training, more timely information, new technology or other resources.

The management group also regularly monitors the performance of frontline operational groups against their respective agreed goals because it is part of their work to ensure that *all the group goals converge to meet the strategic goals.*

To change from DP1 to DP2 requires undertaking a participative STS analysis using an OST methodology like the Participative Design Workshop (PDW).

The Participative Design Workshop

In 1971 Professor Fred Emery pioneered the development Participative Design Workshop methodology for changing organizational design principles from a DP1 bureaucracy to a DP2 democratic team-based structure. After further refinement and development, especially by Dr Merrelyn Emery, it is now the most effective and efficient process known today for creating democratic organizational structures in which members have a shared responsibility for meeting agreed goals.

It is a coherent strategy whereby management and employees within an organization are given the concepts and tools to redesign their workplace using democratic principles. By pooling employee knowledge and initiatives for change, they themselves can redesign their workplace.

The three main components of the PDW are summarized in the following diagram: -

Analysis	Redesign	Practicalities
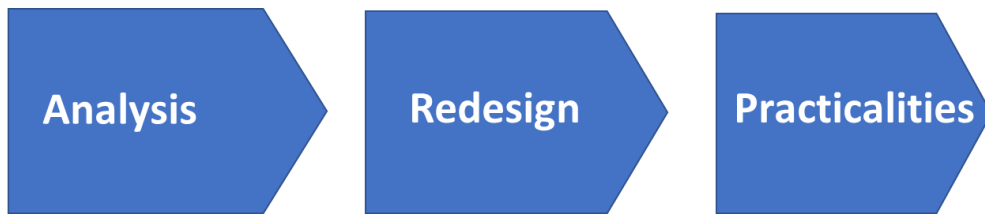
Briefing 1

DP1 & Consequences
- Intrinsic motivators
- Skills Matrix
- High level process mapping

Briefing 2

DP2 & Consequences
- Draw existing DP1 Structure *(identify all employees using initials)*
- Redesign new DP2 Structure *(best possible jobs for all)*

Briefing 3
- Team goals
- Training Requirements from Skills Matrix
- Career Paths
- Employment T&Cs
- Other – make sure works
- Improvement in Intrinsic Motivators

Please note that a full explanation of how to design and run PDWs is made available to clients who change their organizational design principles. Each client receives a customized 'Cooperative Workplaces by Design' handbook to help them continuously adapt and redesign their workplace as their strategies adapt to fast changing business environments.

For those organizations that have utilised the PDW, the benefits of establishing DP2 democratic team-based structures are translated to the bottom line in a relatively short period of time. The following examples summarise how this was achieved.

Manufacturing example

In 2006 Peter Aughton wrote an article titled, 'Planning the Future of Australian Manufacturing (2012)'. In it he emphasised that global changes threaten Australian Industry.

"Intensifying global competition has devastated many Australian companies. A day doesn't go by without reading or hearing about Australian businesses and their employees, as well as ordinary citizens being impacted by the effect of increasing competition from globalization and the fallout from disruptive technologies.

Australian manufacturing is shedding more than 1,000 jobs a week (BRW, Feb 2-8, 2006, page 26) as production activities are moved offshore to low-cost countries like China. "Australian Bureau of Statistics alarmingly shows that 56,000 industrial jobs were lost in 2005. The Australian Industry Group has estimated another 40,000 will go this year." (From an article tilted, 'Imports Menace Industry', in The Age, Feb 17, 2006.)

These losses represent about 10% of the 1 million factory jobs left in Australia. If we continue at this rate, we won't have a manufacturing critical mass to compete globally. A low manufacturing base has many implications for Australia, not the least being national security."

In the 2000's China became the world's major source of manufactured goods. Back then many Australian manufacturing leaders decided to close their doors and send their manufacturing

operations, and jobs, offshore to low-cost countries like China. Many assumed that if you're a high-wage, industrial country like Australia, it's impossible to compete with low-wage countries.

Unfortunately, this thinking exposed our national security when the COVID-19 pandemic surfaced in Australia. For example, during March 2020, healthcare workers could not secure enough personal protective equipment (PPE) because most of our supplies were sourced from China.

Today, Australia produces only two thirds of the amount of manufactured goods it consumes while most developed nations produce more than they require. Manufacturing as a percentage of GDP has fallen from approximately 30 per cent in the 1960s to less than 6 per cent in 2019. As an industrial nation, we are now one of the most underdeveloped manufacturers in the World.

Fortunately, big picture thinking business leaders did not agree with the outdated low-wage assumption. Some understood that competition does not revolve around price. Quality and timeliness are also important factors. Other leaders decided it was too risky to put all their "manufacturing eggs in the China basket."

One manufacturing plant that believed it could compete with low-cost imports from China was a detonator manufacturer for the mining and construction industries.

HO management in Sydney were ready to import detonators from China, but plant management were convinced they could reduce their detonator unit cost to compete with China, so HO gave them a 6-month window to turn things around.

Because a key raw material is ammonium nitrate, the detonator manufacturing plant is in an isolated part of outback Queensland. The operation employs approximately 100 people.

Previous attempts by management to improve productivity by establishing a team-based structure did not go well. For example, one of their initiatives was to create competition between the production shifts by instituting shift team quotas.

Each shift, therefore, had a quota to meet – so, when a defective detonator (about the size of a pen) was produced, it would be passed onto the next shift to fix. Day shift would get through their quota and any defects would be handed onto afternoon shift, increasing rework and cost. This behaviour was repeated across all production shifts.

Because the management-imposed team-based design was producing poor outcomes, we were engaged to conduct a review of the production plant.

Our analysis showed that management had established a *mixed mode operation* – a combination of DP2, DP1 ("so called teams where S1's are called team leaders") and laissez-faire or no structure, which is a worse outcome than DP1.

Also, our review showed that organizational factors alone, (which were directly under management control), were contributing to low motivation and poor mental health, leading to uncompetitive performance.

The DP1 structure that management attempted to transform into a team-based structure is shown here.

Manufacturer
Design Principle 1-Traditional Structure
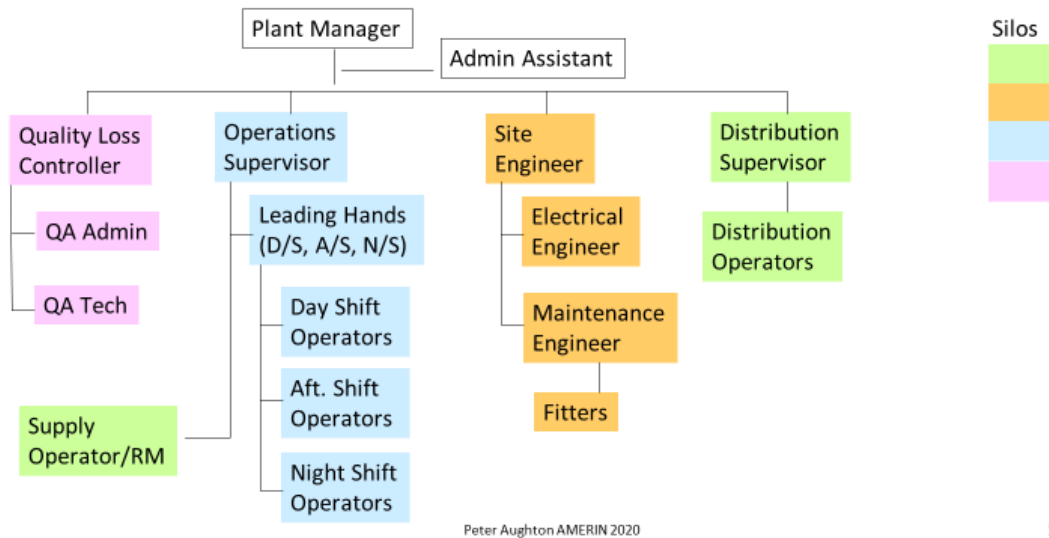
After briefing management about the organizational design principles, the PDW, and a competency-based remuneration system, they decided to redesign the plant structure to DP2.

Working together, all management and employees redesigned their Queensland manufacturing plant from a low motivating and uncompetitive bureaucratic DP1 operation to a participative team-based DP2 entity where employees are multi-skilled and work in self-managing groups that are accountable for meeting agreed goals.

After several PDWs, this integrated DP2 structure was produced.

Manufacturer
Design Principle 2 –Team Structure
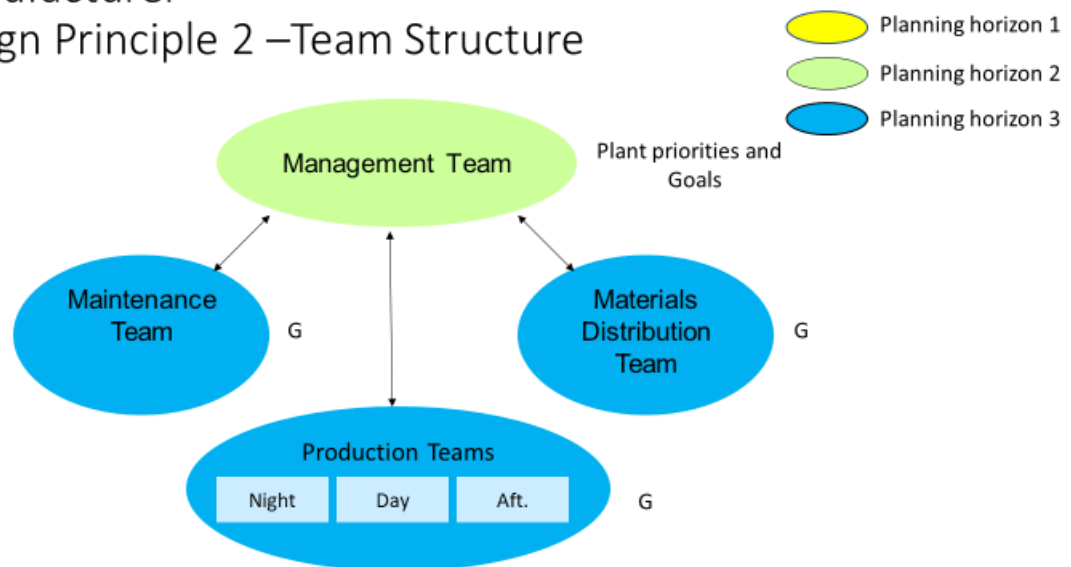
Under the new design all teams moved to a shared 24-hour goals. The teams themselves came up with group goals that would help the plant meets its strategic goals.

Self-interest meant cooperating to improve performance to keep the manufacturing operation and jobs in Australia. Although safety was the number one goal, there was genuine focus by all teams to get detonator unit costs down to compete with the Chinese products.

Some examples of working together to improve performance include: -

- Production employees designed solutions that reduced rework across shifts by introducing a split-shift program
- Duplication of quality inspections was removed by incorporating the quality function in the materials distribution team, and
- Maintenance helped train Production personnel in break down maintenance so they could focus on preventive maintenance where they had opportunities to learn new skills

It's worth mentioning too that the plant was unionized – employees were members of the AMWU. It was informed of the transformation project, but plant management preferred to do the redesign without external union organiser involvement. However, the AMWU came on board later. They cooperated with HO HR, plant management, delegates, and Peter Aughton to develop a competency-based pay system.

Within six months the operation achieved the following unprecedented outcomes:

- Employees worked out a way to immediately increase overall production by more than 40% without capital expenditure. And they showed how they could do this by eliminating most overtime too! This makes their operation competitive with low cost imports from China. (Incidentally, management were concerned that a 20% target could not be met.)

- Employee engagement improved from 32% to 55% (The engagement survey was conducted by an independent consulting company.)

- Three operational management positions that became vacant during the project were not replaced. The self-managing groups incorporated the former management responsibilities into the groups', which included shift production planning and breakdown maintenance.

- It's worth noting that when the self-managing groups were presenting their goals and action plans to national head office management and several board members, the plant manager stated, "This is the most exciting presentation I've heard in this board room. There's a fantastic opportunity for this plant to become very successful." And it was.

Telecommunications example

The Managed Network Service (MNS) of an Australian Telco won the preferred supplier award of its Global Airline (GA) customer because of MNS's ability to change the way it engaged with GA and how it made it easier to do business with all aspects of GA's operations.

The GA Supplier Assessment program was based on Quality of Service, Service Performance, Cost Performance and Best Practice.

Pivotal to the Telco winning this award was the DP2 GA Customer Care Team (shown below). It provided outstanding service performance despite the complex nature of the service task.

GA CCT achieved 100% service availability for all Capital Cities – that is, airports and reservation centres over a 12-month period.

The scope of the GA CCT Project, the Service Levels to be delivered and the new GA CCT organizational structure to deliver these service levels created new standards for the Telco and the industry.

The Project had a major focus among the senior management of all companies involved. And the award was a major achievement for the Telco and led to further business and marketing opportunities.

The DP2 Project deliverables

The DP2-based GA CCT project would have the service delivery capability for new Internet Protocol products to:

- Produce flexible and responsive customer service
- Provide a more intimate relationship with customers
- Increase significantly morale, enthusiasm and productivity
- Establish agile teams that can readily change to achieve new goals and rapidly meet market expectations.

A 3-day MNS PDW was conducted to design a virtual greenfield organization that optimised GA CCT's social and technical systems to achieve the ongoing high levels of customer service required by the GA Customer.

The program necessitated a culture change from supervisors controlling and coordinating workers to team members controlling and coordinating their own work. As soon as this change occurred an unprecedented and sustained level of service delivery was achieved.

For example, when GA CCT was implemented it met 100% service availability, measured in customer response days, for all services. Prior to GA CCT, the Telco was not able to achieve this level of service.

Telco virtual company concept and constraints

So how did this large bureaucratic Telco achieve such exceptional performance results? Our first step was to develop the concept of a virtual company as shown below.

The 'Telco virtual company concept' was presented to senior management. It was explained that: -

- The virtual company will draw on the skills, services and products of the traditional Telco 'silos' while providing a single point of entry for its MNS customers
- It could be implemented within 90 days
- And to avoid mixed mode of DP1 and DP2, a virtual DP2 company would have to be set up in a location that was completely removed from the large Telco DP1 bureaucracy.

Telco virtual transformation concept
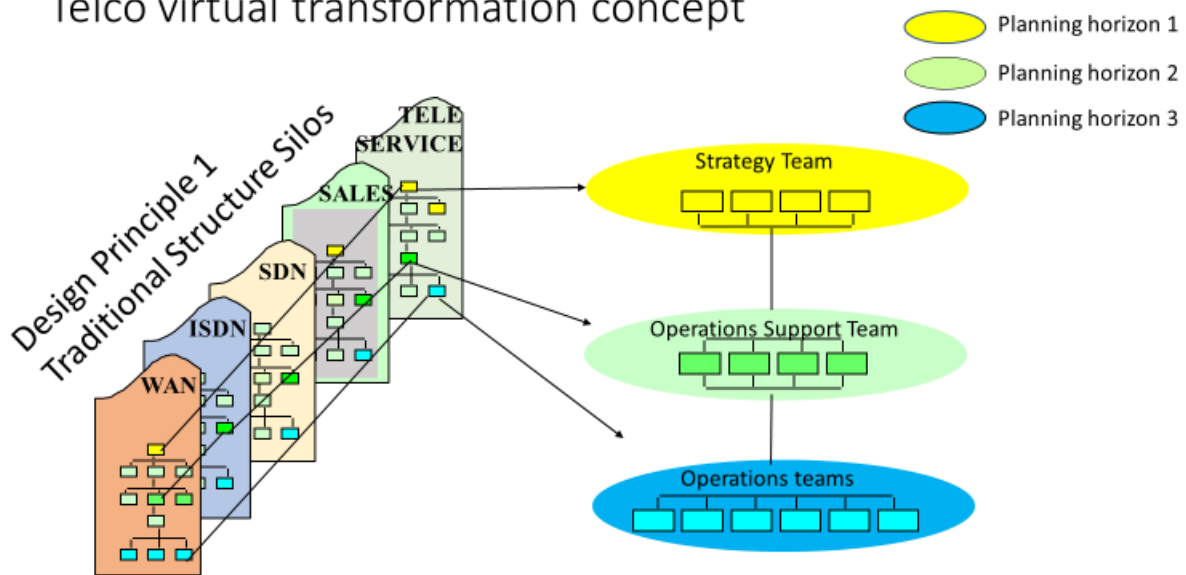
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This virtual company concept was presented to senior management for their commitment and support, and their approval to proceed. There was unanimous agreement for the virtual company concept, however, there were several constraints imposed by senior management. They included: -

- GA CCT was not to use new hires; it would need to use existing management, staff, and contractors from different Telco Business Units.
- There had to be strong commitment from all key players, including GA personnel, to the success of the project
- GA CCT had to be a highly adaptive and responsive entity to meet the demands of GA. If the MNS strategy had to change, GA CCT had to be able to quickly rearrange its organizational structure.

The Cooperation Story

Prior to undertaking a PDW, we conducted several interviews and an organizational review involving GA senior management and the Telco management and staff.

Some performance issues identified included: -

- Communication between silos was through vertical escalation and then across to another silo and then down to the front line – this led to long delays. For example, if a router went down, the fault was communicated up and down the silos. It led to things like customers not able to make bookings on time and aircraft delays.
- In one example we tracked communications showing the escalation went right up to the CEO for resolution of frontline service issues!

To address these escalation issues, the Telco employed hundreds of Service Engineers and Project Managers to coordinate process flows across the silo networks.

After completing our organizational review, detailed preparation and planning was carried out to organise 3-day MNS PDW. The purpose of the PDW was to design a virtual greenfield organization to significantly improve the GA Customer experience.

As a side note: during the PDW we invited several service engineers to present their activation and assurance process flows. The frontline technicians immediately said, "these are wrong; it does not happen that way out in the field'.

The following slide shows the DP2 structure that delivered the exceptional performance outcomes.
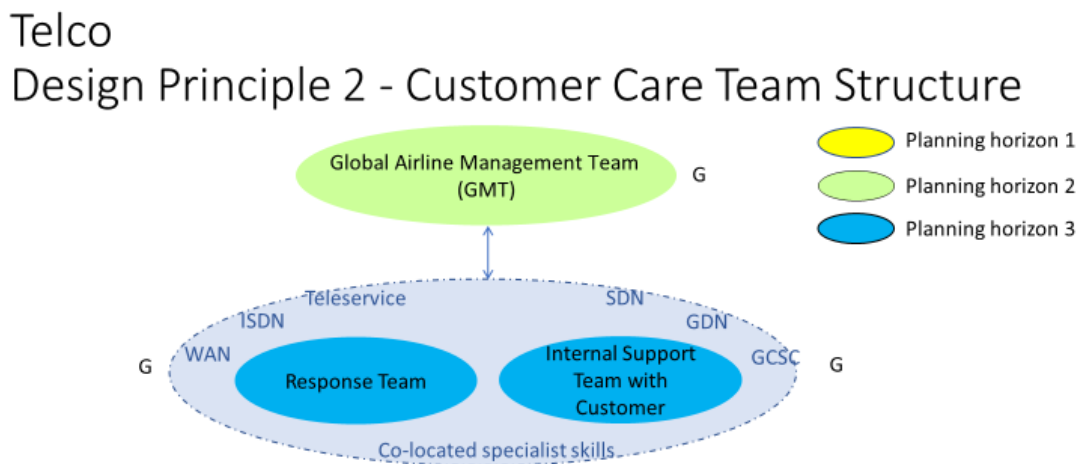
In this DP2 structure the Telco 'Global Airline Management Team' is responsible for: -

- Being a resource to the frontline teams
- Assists with new technology training
- Manages the technology vendor interface
- Manages the interface with the rest of the traditional organisation through service level agreements
- Monitors team's performance against agreed set of goals
- Supports staffing practices for skills transfer and rotation of technicians and service personnel

The responsibilities of the Response team and Internal Support Team include: -

- Monitoring the global digital communications network
- Quickly responding to technology failures – e.g., bypass and reroute digital traffic
- Internal response team works closely with the customer (often on-site) to address digital communication issues etc.
- Meet its agreed goals that were established through service level agreements

As mentioned earlier, the establishment of Telco DP2 Customer Care Team (CCT) was pivotal to the Telco winning the Global Airline's (GA) preferred supplier award.

CCT was able to dramatically improve the customer experience despite the complex nature of the service performance task.

To recap, CCT achieved 100% service availability for all Capital Cities – that is, airports and reservation centres over a 12-month period. It set new standards for the Telco and the industry.

Finally, after the 'virtual company concept' presentation, senior management realised that this concept could be replicated across other strategically important MNS customers. They already knew that their traditional bureaucratic silos with their many levels of authority and single functionality were far too rigid and slow to adapt to the fast-changing Internetworking environment and were not responsive enough to meet the day to day needs of GA. This thinking led to other MNS projects involving corporate customers such as banks.

Disability Care Provider example

In January 2017, the CEO of a national disability care provider (DCP) gave a presentation to the board explaining how the current organizational structure was making it exceedingly difficult for the business to remain viable under the new *customer-centric* National Disability Insurance Scheme (NDIS) funding model. The current organization created performance issues including:

- • Operational roles generated a silo culture.
- • The silo culture was duplicating processes that increased customer risk.

In 2018, Dr Merrelyn Emery and Peter Aughton were engaged by the People & Culture Executive, who initiated a transformation project, to redesign DCP's organizational structure from an inefficient, de-motivating bureaucracy to highly cooperative goal-focused business, where the basic unit of work was a self-managing group (SMG).

The nature of the business, which centred on disability care in metropolitan, regional and remote areas across the nation, made the transformation project particularly challenging. It required over 18 months of intense work to complete.

After several senior management briefing workshops, the project commenced with a series of state-of-the-nation communication programs led by the CEO, which involved all staff – more than 2,000, and other key players such as the Australian Services Union (ASU) and the Fair Work Commission (FWC).

Volunteers from management and staff were then invited to be trained in the Participative Design Workshop (PDW) methodology. This core group were known as the 'Transformation Team' and worked with us to run more than 40 PDWs and integration workshops across the country.

In parallel to the Transformation Team, there was a Terms & Conditions team working on a competency-based pay program and changes in employment T&C's. (A key player that supported the T&C team was the FWC. Its 'New Approaches' program for creating cooperative and productive workplaces is vital to the success of projects like this one.)

The DP1 structure below was produced in the Victorian and Tasmanian PDWs. It highlights how the structure was top heavy with too many unproductive supervisory levels. In some areas of the country we discovered there were 8 supervisory levels from the frontline to the CEO.

The DP1 structure was producing too much duplication, potential client risk and processes that weren't standardised across many department silos.

Disability Care
Design Principle 1- Traditional Structure

Accommodation, Day & Remote IS Carers   Remote IS Carers
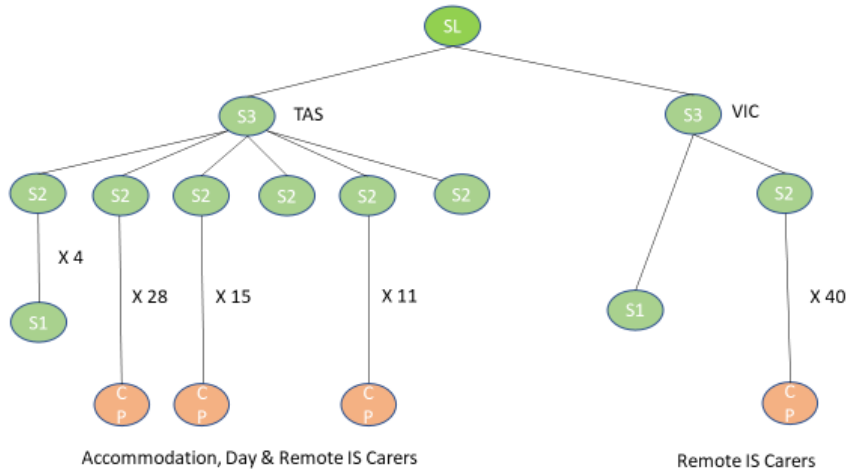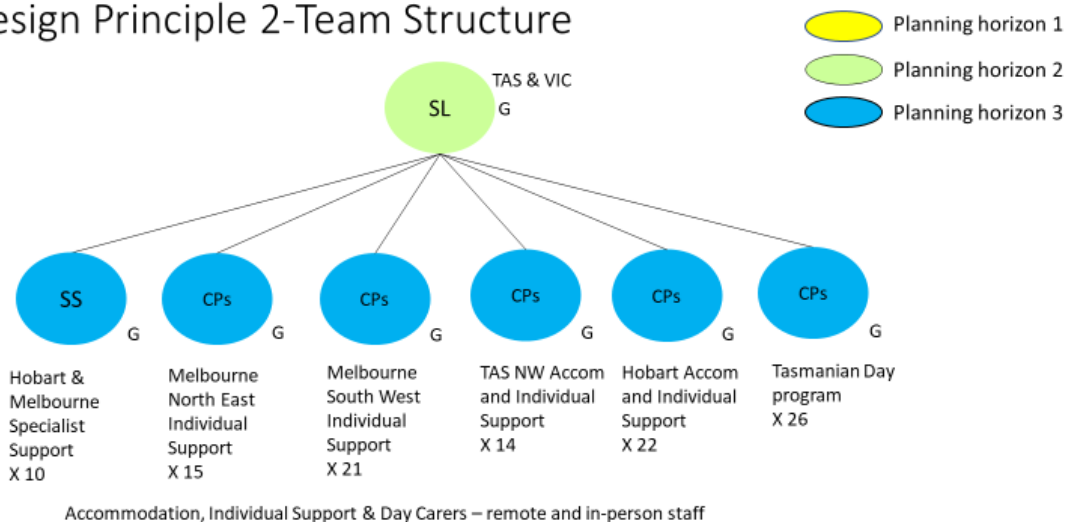
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One of the main challenges faced by all PDW participants was the ability to draw their existing organizational structures. Most structures had at least 7 levels of hierarchy and many employees did not know who worked where because many worked remotely. As such, we had to ask participants to draw their existing structures and identify every employee using their initials.

After all employees were accounted for, participants from TAS and VIC completed their PDWs and produced the following integrated DP2 design.

The design produced no supervisory levels between the team members and the State Leader. And again, the State Leader is a resource for the teams and regularly monitors their performance.

Disability Care
Design Principle 2-Team Structure

Planning horizon 1
Planning horizon 2
Planning horizon 3

Accommodation, Individual Support & Day Carers – remote and in-person staff

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During 2019, all designs like that produced above were integrated into a national DP2 structure. The Transition Team then established a detailed project to implement the national DP2 structure on a State-by-State basis.

Before we completed our project handover, we had already noticed improvements in business performance. For example, self-managing groups in Tasmania initiated a program to standardise processes across the different accommodation houses. Prior to operating in a DP2 structure, quite a few accommodation homes had their own procedures for caring for people with a disability, making it difficult for care staff to act as a backup across different homes.

Business performance will also improve as staff cooperatively work together on a whole task to meet their agreed goals, which were being set up to be regularly monitored via relevant self-managing group dashboards. These conditions will create an adaptive culture that will enable DCP to continually improve performance in the new $22billion NDIS marketplace.

This case study is still a work in progress, so concrete improvement results are not available yet. However, the project highlights that the PDW is applicable in many different organizational redesign situations.

Planning and preparation steps for transitioning to DP2

Finally, organizations that transform from DP1 to DP2 are often facing an urgent and strategic crisis – requiring a "burning platform" of change where maintaining the status quo is not an option. As such, this type of transformation can be particularly challenging for some personnel, especially those who are comfortable in their unproductive supervisory roles.

And because changing design principles is equivalent to changing an organization's 'DNA', it is imperative that the board, the CEO, and senior management fully support and are committed to changing their organization's design principles.

To appreciate the change effort involved, the following planning and preparation steps must be considered: -

- Key players must understand the design principles and their consequences for intrinsic motivation, mental health, and productivity
- Commitment from CEO, senior management and the board must be explicit. They must have in place plans to deal with those who resist change efforts.
- The transition must be sanctioned from the leadership group. PDWs then commence from frontline / operational level – that is, a bottom up approach, sanctioned from the top.
- Conduct an organizational health assessment to determine current levels of engagement and levels of employee mental health for a 'before and after' PDW intervention analysis
- CEO communicates to all employees the strategic goals and rationale for change
- Establish an online employee communication channel
- Involve and get feedback from ecosystem members – customers, supply chain partners, unions, others
- Establish and train a PDW transformation team
- In the current environment, the transformation team will need to know how to:
    o Design work for hybrid workers – remote and/or in-person

- o Suggest ways to eliminate / mitigate errors identified during process mapping using smart technology
  - o Scale agile teams
- Design a bottom up PDW project plan for the entire organisation
- Establish a T&Cs project group to:
  - o Develop DP2 terms & conditions of employment
  - o Use PDW data to establish a competency-based career path and remuneration program
  - o Develop a redundancy policy because some employees may want to move on, even when redeployment opportunities are provided
- Seek support from the Fair Work (IR) Commission's 'New Approaches' program for building cooperative and productive workplaces

Appendix

Preventing Mental Health risks in the workplace

In 2008, Peter Aughton participated in joint Canadian and Australian mental health in the workplace research project. Our analysis of the mental health data clearly shows that organizational structure is the single most contributing factor that affects employee mental health.

In all but one case of analysing the factors that affect low positive and high negative emotions, prevention depends on DP2 (Low tiredness depends on not having DP1).

From our research it can be concluded that organizational factors contribute to mental health. That is, management has the power to improve employee mental health, and therefore productivity by putting in place a DP2 structure.

Our research was published in a paper entitled *'Structure underlies other organizational determinants of mental health'* in the *Journal of Systemic Practice and Action Research*, (De Guerre et al 2008) where we show that workplaces are implicated in the current global epidemic of mental illness.

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