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Unique Features of Government and How Governance Could be Assisted by the Theory of Constraints

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TOC strives to improve the performance of any organization, in other words to achieve more of the goal. As a first move the idea is to draw more from the current resources of the organization.

For-profit organizations have a clear goal of making more money now and in the future. Non-profit organizations, most obviously governments, face a challenge of clearly expressing their goal.

The expansion of TOC to new environments requires special attention to the unique features of the new environment and the resulting impact of them on achieving more of the goal. The penetration of TOC into government agencies have highlighted both the unique difficulties and also the opportunities for TOC to achieve considerable additional public-value.

The purpose of this essay is to describe the features of government, so that we can better appreciate how the arts and sciences of the Theory of Constraints (TOC) might be applied to the endeavor of governance. The TOC champions that have successfully implemented a variety of TOC concepts and tools have created the basis for a methodology of applying TOC to governments. It seems it is the right time to clearly verbalize the special features of governments, all over the world, in order to clarify both the obstacles and the opportunities for achieving more public value with the wisdom of TOC.

The authors of this document envision the TOC community interrogating these observations and having a productive dialog regarding these statements in order to advance our understanding of how government might benefit from established TOC concepts, Thinking Processes, and TOC solution implementations. We recognize that at least 37 cents of every GDP dollar spent across the globe is spent by public sector organizations and we acknowledge that the critical charges of government (security, justice, stewardship of both the commons and the economy, etc.) are fundamental components of the future advancement of the globe and the human condition.[1] Government is an organizational environment in which TOC applications can potentially improve operational effectiveness and efficiency. Pervading this essay is an optimistic sense that the body of TOC knowledge and wherewithal can benefit the planning, policies, and execution of governance at every level on every continent. That said, **the focus of this essay is not on the top government, federal or local, which is heavily impacted by politics and politicians wishing to be elected again, but mainly on departments and agencies that have to accomplish well defined services for the citizens.**

The need for characterization of new environments for TOC

[1] These facts can be accessed at https://www.usgovernmentspending.com/ and https://tradingeconomics.com/european-union/government-spending-to-gdp#. US federal, state, and local spending totals over 37 cents per dollar of spending that constitutes the GDP. By the mid-2010s, federal spending was over 20 percent of GDP, state spending amounted to about 9 percent of GDP and local spending was declining towards 9.5 percent of GDP. Globally, the amount of spending and data reliability varies significantly, but the governments of EU countries spend a larger percentage of their GDP than the US, over 44 percent.

TOC consistently challenges basic assumptions and by that achieves superior overall performance of variety of organizations. TOC was born on the Production Shop-Floor, challenging the common desire to gain high efficiency from every work-center. It also challenges the concept of cost-per-unit, which actually is the core cause of the refusal to acknowledge that only very few, usually just one, resources clearly limit the Production. That critical challenge developed into the Drum-Buffer-Rope (DBR) methodology, and that was just the beginning.

From that starting environment TOC has expanded to other environments. For each additional environment new knowledge, and a somewhat different use of the tools, like the Five Focusing Steps (5fs), has been developed. For instance, moving to distribution organizations raised the need to define a different type of buffers: stock buffers. Later, stock buffers demonstrated their benefit and usage for production as well.

Going into multi-project environments raised the need for new solutions, still mainly based on the key original thoughts of TOC. When TOC entered healthcare, for example, it forced changes to the original TOC thinking, recognizing there is no practical way in healthcare to choke the release. The use of Buffer Management to identify what to change in order to improve the flow pushed the TOC philosophy further.

In addition to manufacturing, project management, and healthcare, TOC has also provided considerable value to supply chain, educational, retail, information technology, and service industry operating environments. There are more organizational environments, such as government, that TOC can potentially provide huge contributions toward their performance improvement. But, in order to achieve this, there is a real need to understand what the key differences are between the new environment and the current TOC BOK, which might require changes or development of new knowledge to be efficacious in the new environment.

Let us evaluate the key characteristics of government, focusing on those aspects that fundamentally relate to the TOC BOK in order to learn what aspects of TOC readily apply to government and what will likely require modification or adaptive integration to be effective in that environment. Using a structured approach to achieve this objective, we will first identify a key characteristic of government that differentiates it from other environments that TOC has traditionally provided considerable benefit. Then our approach is to pair this unique aspect of government with a TOC key assumption or principle that pertains to a particular aspect of the government environment. On this basis we will provide early speculation on the promise a TOC implementation might hold for government adaptations and we will consider what adaptations might be required in the TOC BOK to facilitate successful integration of TOC concepts into the practice of governance. Through the lens of TOC, we will take a close look at the opportunities and the difficulties of achieving significantly better performance in government agencies. Thus, in a nutshell, this paper aims to identify a differentiating characteristic of government, pair it with a TOC concept, and consider the benefits, or difficulties, of deploying the TOC approach in government.

Such an unprecedented and vigorous pairing of TOC and government attributes might benefit from a running example that provides tangible description and detail. As we consider these concepts, those of

us both in and out of a government environment will likely benefit from a recognizable and frequent task of government. The investigative work of a team dedicated to identifying fraud or abuse in a government program might provide this analysis a good, straightforward running example. Investigators and the work they do to gather evidence as it relates to criteria establishing a breach of expectations or a crime is a ubiquitous function of government around the world.

The first key characteristic distinguishing the government environment**:**

A clear and agreed upon organizational goal is elusive in democratic government because of shifting political priorities and values.

The Theory of Constraints (TOC) has the following key assumption: The organization has a clear and agreed-upon goal. But we doubt whether the overall government of a democratic country has a clear and agreed-upon goal. Theoretically the goal of every government is to generate public value for the citizens. In practice, defining the public value is open to different perspectives, depending on certain values that mark the beliefs of political parties. Not only is it difficult to express the goal, and the vision, of any political party, but the possibility of a change from one party to another brings considerable shift of values that has a considerable impact on many government activities and their related objectives. The conflict cloud, a major TOC tool, is effective when both sides of the conflict agree on the ultimate goal. When values clash it is not certain that using the cloud would assist in resolving the conflict. When a clash of values exists, a compromise might be the best practical result that can be achieved.

This vacillation between varying values and differing goals is not a new phenomenon to senior government administrators. They often find themselves in a balancing act between two sets of political values and goals. Consequently, they strive to create rules and systems that thread a viable path through political differences. Administrators defer to existing laws and help to formulate rules and goals with as much equity, fairness and balance as the statutes allow. For example, the words “effectiveness and efficiency” are often used together in government goal statements in order to accomplish objectives that appeal to multiple parties and varying political affiliations. Organizational performance measurement efforts often target both effectiveness, the ability to accomplish program objectives, and efficiency, the ability to do so in a cost-effective manner.

The TOC BOK may be able to provide insight, problem-solving, and methodological approaches which may be able to assist government administrators striving to balance competing values and their associated demands. For example, this assistance might include providing agencies with a clear goal with associated metrics to track improvement promises to enable government agencies to generate considerable value from TOC solutions.

So, a key element for TOC to improve the performance is to have an agreement on the goal and **the ability to measure progress toward that goal.** Harvard Professor, Mark Moore, in his 2008 lecture entitled, “Recognizing Public Value: The Challenge of Measuring Performance in Government,” put the challenge thus: “while standard financial accounting systems can capture financial flows through and organization together with the costs expended by an organization in producing particular products and services, it should be clear that if we want to measure the public value an organization produces, we will

have to construct some other technical system that can allow us to record when public value is being produced."

The measurement system Moore envisions would need to clearly identify what is produced by government and be able to reflect the value of that good or service. But the value in government cannot be reflected by the price the market is ready to pay for the government's goods or services. Governments create value for the generic good of all the citizens and commercial considerations of value-based pricing should not play any role in these decisions. Instead, while the value to the customer will likely remain an intangible, we can determine the total operating expenses (or the budget) to produce the total amount of items in a year. Still, the question is whether this may assist us in recognizing public value. TOC's throughput economics mindset and its associated body of knowledge can help government delineate public value goals and measurements, while associating them with the total cost of generating that value.

It may be possible to link the cost of providing the service with the public value of the service to help the government and stakeholders evaluate whether the public value is worthy of the cost. The first step in doing so is to define the 'goal units', or quality-throughput (QT), in a manner that allows measuring it. This is necessary for determining whether the public value created by the agency last period was better, equal, or worse than previous periods, and also for setting the expectations for the future. Throughput can be defined as either money, or service-units. A QT goal unit thus defines the basic service.

The reason of adding Q, quality, as an integral part of the throughput definition is that for a commercial organization the market decides upon the value of the product or service while including quality considerations. When the quality is not good enough the market would punish the organization by shying away from its offerings. But the market for government services is usually captive. Thus, the value assessment of the government services has to include an objective assessment (as possible) of the quality of the service. Certainly, response time, completeness of the service rendered, and possibly also number of complaints and rework, should be part of the definition of the Q part of QT.

This TOC approach acknowledges that the agency produces other services and provides a way to define them by assigning a proportional QT value to other services based on their functional relationship with the basic service. In other words, it is possible to define a QT unit as a delivery of a basic service on time and quality standards, and then define other services is relationship with that basic service. For instance, issuing an extension to a driving license is defined as one unit of QT, while issuing a new driving test is three units of QT.

Of course, when government produces QT, there is an operational expense (OE) associated with the production. This invites the question as to whether or not the associated operational cost should be included in the definition of the QT. Dividing QT by OE creates a practical measure, which allows a simple comparison of the overall agency performance between last year and previous years, and could also point to wishful targets for next years. Utah Governor Gary Herbert and Kristen Cox used QT/OE to considerable effect as they strove to measure government improvement to demonstrate a statewide government improvement of 25% in four years. Clearly, cost (OE) and quality are important

components of government goal setting and are also integral to TOC-based improvement concepts. But we also acknowledge some distortions and unintended consequences that might be introduced if OE is used for the QT definition.

Therefore, because introducing OE into the QT definition likely has both beneficial and pejorative aspects, we want to answer two questions. Firstly, we want to examine why putting a cost price on government QT might be harmful to our noble objective of enriching the practice of government with TOC wisdom and tools. Secondly, in somewhat of a rejoinder, we want to layout the benefits we see to using the formula QT/OE to determine the (inverse of) cost per quality unit government produces. This dual analysis will also shed a bit more light on the purpose of this essay: to identify distinguishing characteristics of government so that we can better appreciate how the arts and sciences of TOC might be applied in a governmental environment. Let us examine our first question:

Will putting a price on government QT be harmful to our objective of enriching the practice of government with TOC wisdom and tools?

Should QT for a government agency be based on money? The advantage of money is that it allows objective comparison of the value created by different products or services, which could be necessary when the overall available budget doesn't allow providing all the wishful products and services. In other words, when the budget is clearly the constraint. However, when the product or service is not actually sold to the consumers, or even when the consumers do pay for it, like buying a ticket to a museum, the overall revenues are usually far less than the intuitive estimation of the public value created. Moreover, when a certain government service costs $10, while another costs $20, can we assume the value of the second service is double the value of the first service? Even for a commercial organization this conclusion is many times wrong. While a specific investigation is focused on a specific case, which might involve financial aspects, a more generic public value is generated by the message that the government does not tolerate fraud and is going to inquire into every case where a suspicion of fraud is detected. So, how can the government associate money as a measure of the overall public value of investigations into suspicions of fraud?

There are two general ways to handle the estimation of QT. One is refraining from the use of money, and instead define for every agency a basic service, for which its delivery in 100% quality generates one unit of QT. Other services would be given QT units based on estimation of their value relative to the basic value. For instance, fraud investigations could be roughly divided into three categories. Class C investigation is for a simple, one-time, attempt of fraud. Class B is for cases where a series of frauds over time are investigated. Class A deals with a wide case for major corruption where several different people, possibly even several functions, have been involved with. Say that Class B investigation has a value of 3 units of QT, while Class A generates 10 units of value. The other way is to use the current OE, actually the budget of the agency, to help determining the QT, which is not defined in money.

Before we move to the benefits of putting a price on quality throughput, there are a few more cautionary tales we should consider. Putting a price tag on government services may be interpreted by the public and stakeholders as defining the value of the QT produced. The danger is seeing cost=value,

which, in government is distortion of the true value society gains from the QT. We can know that an investigation into a civil rights discrimination charge costs an average of $4,500 dollars, but the real value of that investigation is much greater. It safeguards the fabric of our societal values and the case outcome brings some element of justice to the claimant, if warranted by the gathered evidence. The clear concern in this example is that society will begin to see the work accomplished by the Civil Rights investigation team valued at only $4,500 per case.

Clearly there are challenges associated with putting a price tag on government QT, but there are also potential benefits which are addressed in our second question:

What are the benefits of including OE in the TOC goal analysis, which can be accomplished using the formula QT/OE to determine the cost per government QT?

The measure, quality throughput over operational expenses (QT/OE) holds the promise of "telling the truth" about government performance. In this measure, Q (quality) is defined by what quality level of service the program manager would like to provide as compared to the organization's actual quality level. Quality, often represented as a percentage, can be delineated by cycle time, "first-time go" success rates, error-rate (rate of rework), customer satisfaction, funding source expectations, etc. T (throughput) is simply the good or service that the government produces. Throughput is a term for the widget or service provided. Put simply, throughput in government is public value. Throughput production is the raison d'être of a government agency; the purpose of the agency is to produce throughput for the community it serves. OE (operational expenses) are ALL of the expenses incurred by the organization producing the throughput in a defined time period. OE is always measured in money.

Here is an example: If an investigations team produces 100 case determinations (the throughput) this month at a 95% quality and an OE cost of $9,800 then the QT/OE calculation, (.95)(100)/9800 would yield 0.0097. The yield of the calculation is a fraction that shows what percentage of the throughput that one dollar will buy. Governmental teams often choose to represent this fraction as a percent change for simplicity and clarity. The inverse of the QT/OE yield (1÷QT/OE) is the cost per throughput (cost per service), adjusted for quality; in our eligibility example it would be $103 dollars per one unit of QT, which in this example is a quality determination. Thus, if we overcome the obstacle of defining QT, we can provide government a feasible way to measure and significantly improve the performance of any public-sector organization.

No matter whether one uses QT and OE as two separate performance measurements, or QT/OE, any improvement can be compared to the reference measurements. Suppose the result of improvements is an increase of 25% in the QT, while OE remains the same. This means a clear increase in the public value generated. If, in order to achieve the additional 25% of QT, there was a need to increase OE by 10%, then d the QT/OE has been improved by 13.5%. Still, from a wider perspective of the budget this improvement should be compared to other improvement suggestions, which might produce higher increase of the QT/OE measurement.

One adaptation to the TOC BOK that should be considered in regard to government applications of QT/OE and clear goal setting revolve around a concept of *Value Realized*. *Value Realized* is the amount

of increased value achieved by the agency as a result of improvements that usually do not incur additional cost or offer significant return on any investment costs. In the investigation team example above, if the team improves production by 25% with existing resources, then the team has created an ability to produce 25 more investigations every month, moving the monthly total to 125. If each investigation has a baseline cost of $103 dollars, then the hard-won improvements the team built created $2,575 ($103 x 25/month) in value realized every month by accomplishing 25 more investigations with existing resources. The application of QT/OE and value realized enables government organizations to compare improvement initiatives and total up their ROI "yield." Government improvement and its benefits can now become quantifiable in terms that everyone understands: dollars.

In essence, QT/OE and the ratio it renders enables managers from any agency, managing any type of throughput to calculate their improvement or lack thereof. The cost-per-quality-unit enables you to see and measure progress with an easily understandable metric. Improvement and innovation can become incentivized in government—something that has been elusive despite waves of effort by different names: Total Quality Management, New Public Management, Lean, and Six Sigma. QT/OE can enable the public administrator to make difficult cost-benefit analysis when allocating resources and setting performance goals.

Clearly, budgets, and the expenses that consume those budgets, are part of the structure and rhythm of government. It is how government translates tax dollars into public value required by society. Cost matters relative to the benefit we obtain from those expenditures. QT/OE helps tell us "What bang we get for the buck we spend." It is an important component variable, along with quality, productivity, and outcomes. Legislators, for better or worse, allocate money to programs to obtain a societal outcome. Including OE with QT analysis helps inform that decision-making by providing information on what can be done to achieve more with the same budget, or much more with some additional budget.

Perhaps, if we identify the undesirable effects of OE inclusion into TOC goal analysis, we can mitigate the pejorative effects while optimizing the benefits of knowing how much it costs to provide units of quality public value.

A point that should be raised in this discussion is whether an agency's budget should be viewed as a strategic constraint or if key, high-level constraints can be found only in value-producing resource constraints. It is tempting to see the budget as the ultimate constraint in government. Public servants use their allocated operational funds to accomplish public value. When those funds are expended the production of public value ceases. The cause and effect are clear: budgets enable public value production, so it is logical to assume that budgets necessarily limit production.

They do. However, there is a large assumption at work in such causal logic and needs to be exposed and evaluated. Budgets limit public value production when other key resources have already been fully exploited. Viewing the budget as the ultimate constraint presupposes that we have accomplished the public value in the most optimal way possible. This assumes we have already improved key processes iteratively over time until the gap between potential capacity and actual capacity has attenuated to nearly zero. The large assumption is that the organization has fully exploited the key resource

constraint in government and we are doing the most we can with the budget the entrusted to the organization.

When this assumption is truly met, then the budget is indeed the ultimate strategic constraint in government. However, most organizations will have a significant delta between *current* operational capacity and the outfit's *potential* capacity to produce quality units of public value. In such cases, the logical and likely constraint will be the resource or asset producing the value. In government this is often the professional decision-maker, such as a clinician deciding eligibility on a Medicaid waiver, or the team producing the service desired by the public, such as investigations or permits. Until these resource constraints begin to produce quality throughput optimally, they will remain the constraint and should continue to be the focus of improvement efforts.

Second key characteristic of the government environment

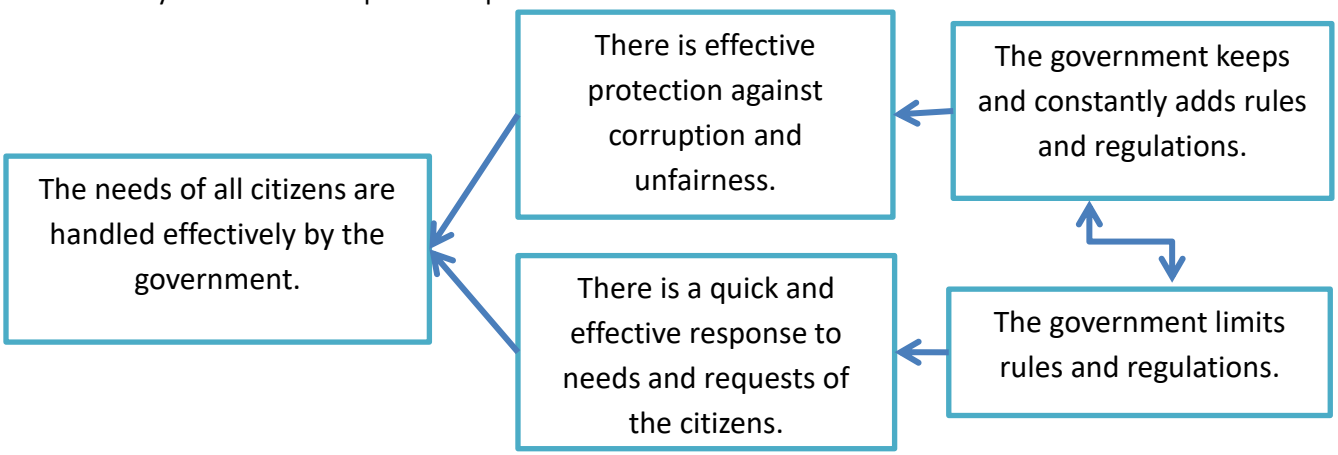
A unique government agency characteristic is being subject to many restrictions due to variety of regulations, which cannot be challenged, at least not on the level of the agency itself.

There are several sources causing this thick labyrinth of restrictive rules, regulations, and policies. These sources include a desire to achieve the intent of legislation with specific procedures, in pursuit of fairness and equal access to services, and to reduce the risk of fraud or abuse, to eliminate the possibility of something going wrong and, as a consequence, being excoriated in the public eye. Consequently, this rules-based environment often creates a risk adverse and officious climate that may not be conducive to the introduction of change and experimentation required of continuous improvement efforts.

While any other organization has set of rules, policies, norms and performance measurements, which impact the behavior of its employees, managers at nearly all levels retain the flexibility to take actions that seem beneficial for the organization. Government agencies are truly bound and restricted in terms of their ability to act upon their own understanding of what contributes to the goal. This is true unless the government takes steps to change the regulations, which takes time and a lot of effort.

A special side-effect of any government agency is the concern for corruption and unfairness. In many ways the bureaucracy yields a certain protection against the corrupt use of the government power. Any challenge on any law, rule, or regulation has to face checking to ensure that it does not open the door to corruption, as a generic potential negative branch. On the other hand, the bureaucracy slows down the response of the government, and any government agency. This means there is a generic conflict between the huge value of being able to respond very fast to the needs of the citizens, and the need to

control the system from corruption and procedural unfairness.



Still, within the boundaries set by the stiff rules there is enough flexibility to improve the flow of services to the citizens.

Third key characteristic of the government environment:

Continued funding and authorization of government functions offers a generally stable environment.

Government agencies are usually stable environments, even though a change after elections, or a national disaster might introduce considerable changes, but then they are usually stabilized again. Their funding year-to-year is very stable and generally rises in attempts to meet the demands of growing populations. Continuity in funding, generally consistent missions, and pension systems that encourage employee longevity help to create a stable environment for government.

In his "Standing on the Shoulders of Giants" article, Eli Goldratt speaks about three aspects of stability.

I. The processes and the products do not change significantly for a considerable length of time.
II. Stability in demand over time per product.
III. Stability in total load placed by the orders on the various types of resources.

Being stable in all three aspects makes government agencies suitable for Lean, Six Sigma, and certainly the TOC tools in combination with Lean and Six Sigma. The immediate objective of the combination is to accelerate the time response to the citizens' requests, without harming the quality of the response.

A certain aspect of instability in governments is created by the nature of service – having to directly interact with the citizens asking for the service or product. This interaction can cause two different elements of potential instability. One, is the request for the service and the required information from the citizen applying for the service. This interaction usually doesn't cause considerable instability. The other element of dealing with complaints might cause certain instability, especially when the media, many times invoked by a specific complaint, gets involved. However, the forces of stability are strong in government and, as the issue is addressed, equilibrium is often reestablished fairly quickly.

The question is how this relatively stability can provide opportunities to deploy TOC solutions and methods. Consider the following theory for government and public sector agencies: That public sector organizations who use continuous improvement methods attain operational excellence more often and more profoundly than agencies who do not use continuous improvement approaches. According to this theory, a process of ongoing improvement is the path toward not only better and more public value, but also a viable way to achieve and maintain operational excellence. Perhaps the relative stability of government can facilitate ongoing improvement efforts by providing a consistent environment that is less subject to disruption than the comparatively more turbulent environments found in the private sector.

TOC strives to achieve very significant improvements, leading organizations to become ever-flourishing. It seems that with government agencies achieving a high level of operational excellence, producing consistently more public value, is a huge achievement. TOC appears to offer a way to provide government with ever-flourishing and ever-renewing processes of ongoing improvement.

Fourth key characteristic of the government environment

Government cannot control demand.

In government the mandate is to serve the community based on a set of rigorously established criteria. If demand for services exceeds capacity, like having an internal bottleneck, and government continues to accept new requests for services, causing more and more delays in the delivery of services, then this will generate widespread dissatisfaction and even resentment towards the government. Such undesired effects of high demand generally result in an appeal for more funding, which always takes long time to be effective in reducing the queue for the government service. Increased demand rarely results in definitive efforts to improve capacity within existing resources. We have seen this happen in healthcare due to Covid-19, a situation the citizens would not like to see ever again.

The use of TOC, which is especially tuned to reveal hidden capacity, could be of considerable value to prevent the problem from occurring and actually improve the response time to the citizens requests. The strategic gatekeeping inherent in Simplified Drum, Buffer, Rope (SDBR) may also serve to steady demand on governmental systems. Critical Chain Project Management (CCPM) has the potential to enable organizations to take on less projects in one snapshot period with the considerable reward of achieving many more projects on an annual basis.

Buffer Management, a unique feedback tool, is used to create one clear priority system for any government agency, that points what should be done next. It also serves as a warning mechanism when the demand grows too fast relative to the existing capacity. Buffer management can be used to prioritize improvement initiatives, pointing to the areas where an improvement would truly improve the performance of the whole agency.

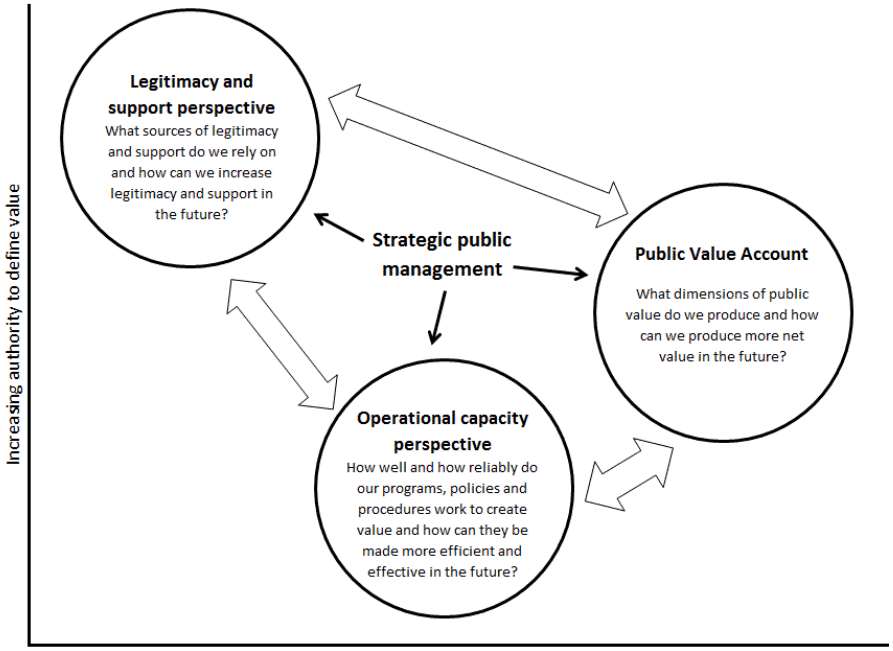
Anti-fragile organizations that are resilient to the ebb and flow of demand can build in contingencies and trigger points, which can be created with cross-training and subordinating less-critical functions to the constraining critical activities. Public managers can be educated on ways to manage the work, control

work-in-process, and predict bottlenecks, which can in turn reduce the high stress, high effort periods currently caused by unpredictable demand and the tendency to always begin all work immediately.

Fifth key characteristic of the government environment

Governments uniquely operate in a Strategic Triangle as they strive to find balance between expectations that they maintain legitimacy and support, produce public value, and maintain operational capacity.

Governments have to develop strategy as they navigate competing demands, allocate limited resources, and produce public value. The Government Strategic Triangle, which was developed by Dr. Mark Moore, reveals how government functions and reacts differently to stimulus from stakeholders than other types of organizations. The Strategic Triangle creates a distinctly different operating environment which is very sensitive to criticism and puts the legitimacy of government in a precarious situation. Government strives to maintain legitimacy and is loath to lose or risk any legitimacy, thus creating a predominately risk adverse environment. Change invites a degree of uncertainty which is unsettling to government employees and steering commissioners. Even efforts to improve hold a degree of risk and improvement projects are often viewed with suspicion or avoided altogether.



From: Recognising Public Value, Mark Moore, 2013

Government agencies have to strive to manage and balance the three elements of the Strategic Triangle and this push-and-pull makes determining an agency strategic path very difficult. Political pressures, mission, legal mandates, regulation, and stakeholder demand causes government organizations to tend to shy away from true strategic planning and efforts to achieve strategic change despite a rising need for transformation.

The TOC Evaporating Conflict Cloud has the potential of removing some of the core conflicts troubling agencies operating in the Strategic Triangle. For example, in many cases, agency leadership assumes that solutions are not viable because “that group of stakeholders would never go for it” when, in reality, agreement is only clouded by untested assumptions and unnecessary pre-requisite “wants.”

The strategic thinking tools of TOC promise to provide government the wherewithal to meet the challenges of the Strategic Triangle and still be able to chart out a course of vision and transformation. Strategic planning tools like Current Reality Trees and Pre-requisite Trees can help government obtain strategic goals despite complex stakeholder entanglements. Future Reality Trees and Goal Trees can bolster strategic operations by offering government a way to connect high-minded goals with tangible tasks, projects, and improvements that will target constraints and result in decisive change.

Sixth key characteristic of the government environment

Government must pair money with authority to achieve legitimate expenditure.

In government available money and authorized authority are two different concepts. This dynamic must always be understood and managed in the public sector to a degree not found in other operating environments. Just because you have money in government does not mean you can spend it; you must have authority to do so. Even federal funds must be appropriated by State legislatures. State funded county programs are meticulously audited to ensure every dollar is spent on the program in accordance with elaborate expenditure rules. In government there are many colors and buckets of money which often expire within two years of assignment to programs. Projects hurriedly spend money from this fiscal year to prevent cost overruns next fiscal year. These factors introduce a mind-boggling complexity that often results in fiscal shortfalls or in mismanaged money that goes unspent despite critical public need.

Adaptive integration of buffers and throughput economics may enable flexible and logical expenditure on public priorities with less back and forth and at a lower cognitive load for staff. Authorized buffers could potentially provide emergency funding for unanticipated challenges. Perhaps shared buffers would free government agencies from the requirement that they spend every dime in this year's budget or face punitive budget reductions during the next fiscal year. Throughput economics also has the potential to identify programs with the highest system ROI and thus enable better fiscal decision making and budget allocation.

Seventh key characteristic of the government environment

Government has a unique responsibility to safeguard and care for its citizens, especially during disasters.

A government's legitimacy can be threated if it does not move swiftly and effectively to assist its citizens after natural or man-made disasters. This is because government is charged with the responsibility to safeguard and care for its citizens, especially during emergency situations and major change. Government can sometimes contract out the tasks of assistance and recovery to non-profit and for-profit companies, but it can never delegate away its accountability and responsibility to help its people in emergencies. It is in such moments of emergency that constraints management has significant potential to enable and elevate relief and recovery efforts. Two examples illustrate this potential and provide a glimpse of what wherewithal TOC might hold for post-disaster governmental operations.

Major Jack Snow was in eye of hurricane aftermath when he was put in charge of the Houston shipping and receiving docks dedicated to relief efforts by the mayor in the hours after hurricane Harvey hit the City in 2016. The situation was a mess. 18-wheelers with bulk relief supplies had converged on the City docks from every direction resulting in a snarling traffic jam. No one was arriving or departing the docks. The area was locked in a truck-strewn Gordian knot. An Army Reserve logistician, Jack had recently learned about TOC and constraints management in his civilian job where he investigated potentially fraudulent applications in a subsidized childcare program. He deployed his TOC knowledge energetically on the dire situation before him.

When Jack arrived a day after Harvey struck, City officials were distressed at the failure to distribute water, food, medical supplies, and other essentials to the flooded and devastated regions of Houston. The officials knew the relief supplies had arrived, but nothing was making it into the neighborhoods. They estimated it could take over a week to work out the traffic jam and get the docks functioning. But they did not anticipate that the TOC-trained Major Snow would apply the Five Focusing Steps and get the docks fully functional in less than 30 hours.

When Major Snow took command of the emergency supply operation at the Houston docks, he first identified the receiving docks as the primary bottleneck in the operation. Second, leveraging his logistical experience, he determined the optimal capacity the docks were capable of and worked to feed that constraint with uninterrupted supplies. Third, he ensured that all other activities of the trucks and the docks were subordinated to the function of receiving supplies at the dock. Then, fourth, he elevated the constraint by repurposing idle City workers to unload trucks, assess bulk supplies, and build "retail" packages that city trucks delivered to the neighborhoods.

At this point, Major Snow reassessed the situation and applied the fifth focusing step. He realized he had broken through the receiving dock constraint and shifted his focus to the shipping docks which he recognized as the new and enduring constraint of the operation. Major Snow's successful application of the Five Focusing Steps during the emergency situation is illustrative of a larger potential TOC has to assist government in disaster recovery missions. Government staff does not habitually work in distressed, emergency conditions, but TOC teachings can help them achieve their recovery goals by providing them proven TOC methods and techniques.

Similarly, Milan Gupta in India, combined his supply chain experience with TOC constraints analysis to solve a medical oxygen distribution problem that was contributing significantly to COVID casualties across the country.[2] Applying Little's Law to the known production rates, Milan was able to determine that the true constraint in the process was not oxygen production, as the government believed, but rather the transport time that was the defining constraint. Milan's analysis concluded that for the entire national distribution process "reducing the container travel time by just 1.7 hours will improve the daily supply rate to Delhi by the same amount as is achieved by importing/adding one more cryogenic container." This constraints analysis flipped all the government's current logic and assumptions because

[2] Linked in article, Oxygen Crisis: An Immediate Solution, by Milan Gupta, with discussions on the topic by contributing professionals, 27 April 2021, at https://www.linkedin.com/feed/update/urn:li:activity:6792791599370780672/.

he revealed the government's focus should be on improving transport times and not on improving oxygen productivity/imports, which was sufficient. Clearly, it was a transport problem, not a production/import problem. Many lives could be saved if we could focus on the right part of the process.

These two examples illustrate some of the "ASAP wherewithal" that TOC thinking and solutions could provide government leaders and staff who are handling a crisis. TOC knowledge has the potential to more profoundly enable government to safeguard and care for its citizens, especially during emergency conditions. Putting TOC thinking and solutions into the "kit bag" of government has the potential of decisively assisting those government leaders handling emergency situations caused by major change or disaster.

What can be achieved with TOC in government agencies?

From the TOC perspective the first mission is to define the public value, the products and services, generated by the agency. This is the key input for defining the goal-units, which TOC refers as the throughput (QT) of the agency.

Defining the goal-units for different products and services, notifying some requests as having higher value than others, might require careful judgment. For example, considering the response time to the requests as part of the value definition is an important component of quality in government, but not the only aspect of quality throughput (QT). Determining a definition for quality throughput will prove itself critical for achieving higher public value.

The use of conflict clouds has potential for overcoming certain obstacles, generated by the strict regulations. Finding solutions that do not compromise the regulations, but allow the generation of more value, is of considerable importance.

In many ways, the TOC applications of SDBR and CCPM, can be implemented in government agencies in a straight-forward way, with one obstacle: the key resources are human, so measuring their capacity is tricky. Also, the phrase "exploit the system constraint" has negative connotations. However, the promise of TOC's "breakthrough results" in the service of government, and the potential to address wicked constraints in our global community, makes overcoming the challenges a worthwhile effort.