Today's Scenario

Leaders today are already empowered to make key decisions to govern their organizations with the help of various *advanced paradigms and tools* which have evolved over a century of thought-leadership

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The Evolution

From the advent of Economics and Business Management as formal disciplines, followed by the meteoric growth of Information Technology a number of paradigms have been developed to empower leaders with information and knowledge to make the right decisions to improve the performance of their organizations and to remain upto date and competitive in a dynamic fast-changing world.

The Brief and Exciting Answer is
YES!

In this discourse I'll elaborate on <u>how this can occur</u>, so..

..please read on further to discover this for yourself

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The Kind of Tools proposed are sytems that

- augment and *do not* replace the advantages gained by existing known techniques

- address the gaps and limitations of existing systems

- focus on identifying and managing the most crucial control parameters for optimizing overall organizational performance

- enable organizational leaders to achieve significantly heightened levels of effectiveness and competitiveness

What I'll Cover Here

1. First of all I'll name the *most well-known popular techniques* used today by advanced organizations to evaluate and improve their overall performance.

2. Thereafter I'll describe each technique and call out its *strengths and limitations.*

3. Finally I'll describe how an organizatation today can develop its *own next generation of Governance Tools leveraging its own data and the power of Artificial Intelligence.* As a high-level analogy to support our overall concept I'll cite the evolution of the motor car from early vehicles with basic engines and mechanisms to the amazing self-driving cars of today

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The Most Well-Known Paradigms

Named below are 9 well-known paradigms for organizational performance evaluation, analysis and management

1. SWOT Analysis

2. The Five Forces and Business Strategy (Porter)

3. Enterprise Resource Planning (ERP)

4. Customer Relationship Management (CRM)

5. Business Intelligence (BI)

6. Business Process Modeling (BPM)/Re-design (BPR)/Improvement(BPI)

7. Robotic Process Automation (RPA)

8. Business Analytics

9. Agile Frameworks

In this section I'll provide Descriptions, Strengths and Limitations of each one of these Existing Techniques

1. SWOT Analysis

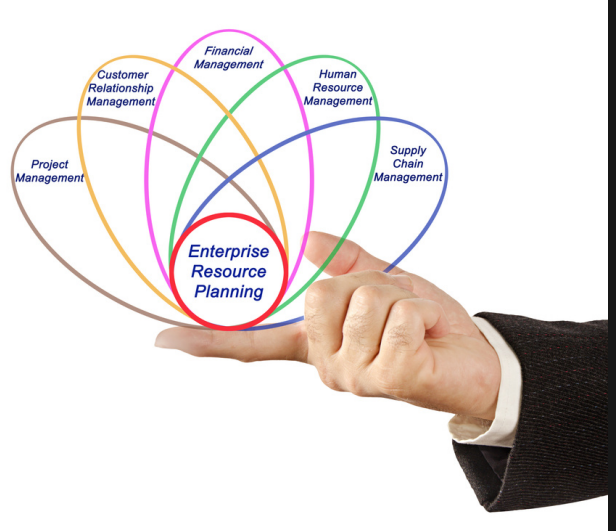| Name of Technique	Type of Technique	Description	Advantage	Limitation/s	Dates from
SWOT Analysis	Empirical Analysis	Strategic 2x2 Matrix identifying an organization's Strengths, Weaknesses, Opportunities and Threats (SWOT)	Helps to identify internal and external factors that are favorable and unfavorable for a business	By itself SWOT cannot determine an effective strategy to enhance business performance for gaining competitive advantage: it is merely a starting point for such discussions	Late 1960s/early 1970s

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Descriptions, Strengths and Limitations of Existing Techniques

2. Porter's Five Forces

Name of Technique	Type of Technique	Description	Advantage	Limitation/s	Dates from
Porter's Five Forces Framework for Business Strategy	Empirical Analysis	Framework to analyze competition of a business based on 'Five Forces' namely: 1) Bargaining power of suppliers; 2) Bargaining Power of Buyers; 3) Threat of New Entrants; 4) Threat of Substitute Products/Services 5) Rivalry among Existing Competitors	Based on industrial organization (IO) economics a Five Forces Analysis can help companies assess industry attractiveness, how trends will affect industry competition, which industries a company should compete in and how many companies can position themselves for success.	A Five Forces Assessment does not identify actions to address threats from these forces e.g., what should leaders do if there's a high threat of substitution?	1979

Descriptions, Strengths and Limitations of Existing Techniques
3. ERP

Name of Technique	Type of Technique	Description	Advantage	Limitation/s	Dates from
Enterprise Resource Planning (ERP)	Information Technology	An integrated set of software tools designed for an organization to collect, store, manage and interpret data from many activities such as manufacturing, accounting, human resource management, payroll, purchasing and sales	The integration of multiple business processes and data within a single system saves time and expense. Management can make decisions faster and with fewer errors	Very expensive to set up and difficult to customize	1990

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Descriptions, Strengths and Limitations of Existing Techniques
4. CRM

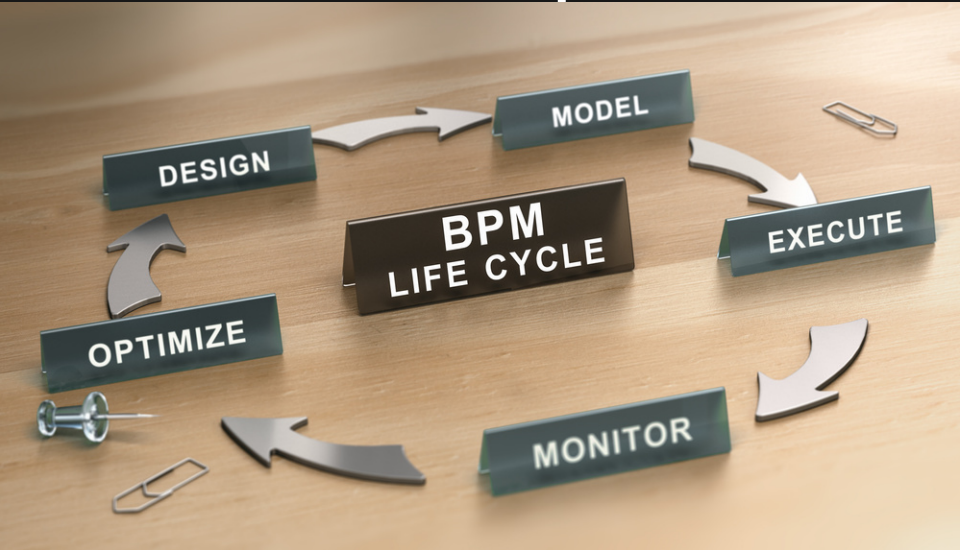| Name of Technique	Type of Technique	Description	Advantage	Limitation/s	Dates from
Customer Relationship Management (CRM)	Information Technology	Software tools for a business to manage its interactions with past, present and potential customers, typically using data analysis to study large amounts of collected information	Enables a business to grow by improving pricing, sales and customer service	Expensive to implement and to train user staff. Privacy and security issues with customer data	Late 1990s

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Descriptions, Strengths and Limitations of Existing Techniques

5. BI

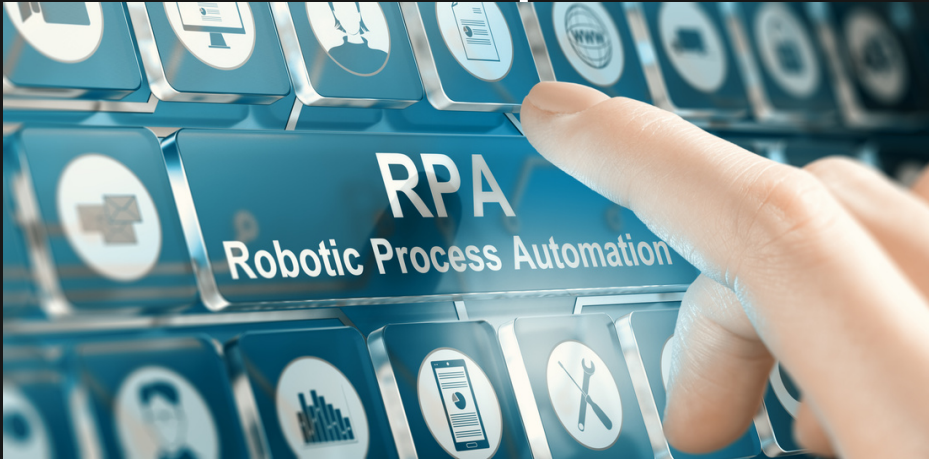| Name of Technique	Type of Technique	Description	Advantage	Limitation/s	Dates from
Business Intelligence (BI)	Information Technology	Software tools for advanced business reporting from consolidated business data repositories using increasingly powerful data analysis tools	Used by companies to support a wide range of business decisions ranging from strategic to operational	Difficult to consistently obtain an accurate picture of operations from large volumes of entirely historical data much of which is unstructured today. Data privacy and security issues	The general concept of BI has existed for 100+ years however the modern form has evolved from around the year 2000

Name of Technique	Type of Technique	Description	Advantage	Limitation/s	Dates from
Business Process Modeling/Re-design/Improvement	Information Technology	A set of advanced software tools to create visual depiction of business processes with the purpose of improving them in terms of efficiency and effectiveness.	BPM Tools are used to obtain a deeper understanding of how processes within a business work and the way the overall business functions. They can be used to generate simulation models of how these processes can be modified/re-designed to achieve better business performance outcomes	BPM may over-simplify complex scenarios. It could also restrict innovative thinking within a company if management are overly process-prescriptive.	Process flowcharts have existed for 100+ years. The term 'business process modeling' first appeared in 1967. Around 1995 the first BPM software tools appeared. The BPMN (Business Process Modeling Notation) standard was first introduced in 2005.

Descriptions, Strengths and Limitations of Existing Techniques

7. RPA

Name of Technique	Type of Technique	Description	Advantage	Limitation/s	Dates from
Robotic Process Automaton (RPA) - Workflow and rules based Decisioning	Information Technology	Software tools to enable companies to implement flexible customized solutions that automate decision-making or support human decision making based on workflow-based operational models and data-based system intelligence	Improves the quality of millions of operational decisions within large enterprises to drive profitability and growth	Requires regular updates of the workflows and business rules within the tool in order to remain up to date with changing external and internal business scenarios	RPA tools are a relatively new technique that have appeared around 2010. They combine the strengths of BPM and CRM.

Descriptions, Strengths and Limitations of Existing Techniques

8. Business Analytics

Name of Technique	Type of Technique	Description	Advantage	Limitation/s	Dates from
Business Analytics	Information Technology	A set of automated data analysis practices, tools and services that help to understand both what is happening within a business and why in order to improve decision-making and help leaders to plan for the future	There are numerous advantages of Business Analytics: the key ones are 1) helps assess progress; 2) delivers clear insights of performance; 3) supports data-driven decision making and 4) keeps management updated	The reliability of Business Analytics is entirely dependent on the quality of data, ie, if data is of poor quality then the analytics will be inaccurate and misleading	Business Analytics concepts have existed for centuries however the modern form is concurrent with the evolution of 'Big Data' management techniques around 2005 following the proliferation of web-commerce on a global scale after 2000.

Descriptions, Strengths and Limitations of Existing Techniques

9. Agile Frameworks

Name of Technique	Type of Technique	Description	Advantage	Limitation/s	Dates from
Agile Frameworks	Project Delivery Methodology	An overarching philosophy of managing collaborative team-based project work delivery in an adaptable and efficient way	Numerous advantages eg, improved control, more flexibility, better stakeholder visibility leading to improved achievement of delivery targets, enhanced operational efficiency and better cost-management	Requires active stakeholder involvement throughout the project delivery cycle which may not always be practicable. Owing to evolving requirements it is often difficult to predict the expected result	The Agile Manifesto was launched in 2001 for software development projects. The concepts have since been extended to various other forms of team-based project work delivery

Having thoroughly reviewed existing techniques..

 I will now elaborate on novel ideas and concepts for developing the Next Generation of Governance Tools that will augment the existing technquies already discussed

We commence with the following

<u>Motor Vehicle Analogy</u>

As an initial thought precept lets consider the evolution of the motor car over the last 100+ years.

Early car models were essentially carriages with 4 wheels powered by a fueled engine instead of being pulled by horses. Driving controls included a steering wheel, a clutch, a gear-handle, accelerator and brakes which replaced the whip and the reins used to navigate horse-drawn carriages.

<u>Motor Vehicle Analogy</u>

Today's high technology vehicles are of a very different generation empowered by advanced levels of automation mostly of an electronic and computerized nature. Similar to the evolution of organizational business performance control that were discussed in the previous section, these vehicle automation features have appeared gradually over a number of decades.

Develop Your Own Next Generation of Governance Tools

Motor Vehicle Analogy

 One of the first major landmarks in the development of vehicle automation was

replacing the use of the clutch and the gear shift handle by automatic transmission.

Other significant developments were the replacement of the carburetor for engine

fuel delivery by a more environmentally-friendly and efficient computerized

electronic fuel injection (EFI) system, the introduction of more reliable anti-lock

brakes for enhanced safety and the introduction of automatic cruise control to

reduce driver fatigue by enabling the driver to retain a steady speed on a clear road

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<u>Motor Vehicle Analogy</u>

Vehicles of the current era are commonly equipped with central door and window locks, electric windows and mirrors, voice interactive GPS navigation, audio-enabled GPS-connected reverse-parking cameras, advanced inbuilt audio systems with Bluetooth speakers that connect to a smartphone within the car, automatic photo-sensor headlights and windscreen wipers and various on-dashboard monitoring alarms for lights, battery, brake pad thickness, tyre pressure, etc.

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Motor Vehicle Analogy

Following these amazing developments motor vehicle automation has now risen to even greater heights by the creation of *self-driven cars* with the use of advanced sensor technology (such as LiDAR) and Artificial Intelligence (AI). Such self-driven cars are either semi-autonomous (requires a driver) or fully autonomous (driverless). Today <u>semi-autonomous vehicles</u> can be purchased and driven, however driverless cars are still not legally approved for commercial sale.

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In context of the material covered in the previous sections I now propose the following <u>concept migration</u>

If car driving (by the use of multiple sensors for continuous environmental data gathering and the employment of Artificial Intelligence techniques) can be made semi-autonomous it should be possible to migrate these ideas/concepts to build new paradigms for enhancing the automation levels of organizational governance to much greater heights than they are currently.

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<u>Concept Migration</u>

<u>WHY?</u>

This is because just as a semi-autonomous car is essentially a multi-parameter entity that changes its location over time when the driver operates multiple controls empowered by automated technology and <u>Artificial Intelligence</u>, so also is an organization another multi-paramater entity (consisting of human skills and various inanimate assets) which changes its earnings, economic status and reputation over time driven by leaders using advanced decision- making governance techniques.

<u>Thus the general problem space we're addressing here is one requiring control of multi-parameter temporal transitions in various data domains.</u>

Develop Your Own Next Generation of Governance Tools

Having answered the WHY question earlier by justifying the concept migration from the motor vehicle analogy I will now indicate HOW Artificial Intelligence can be deployed *most effectively* to develop the next generation of Governance Tools

The Power of Artificial Intelligence

Artificial Intelligence (AI) or more specifically Machine Learning (ML) is a branch of Computer Science that offers technology and algorithms to build systems that can be classified as 'Artificially Intelligent', ie, exhibiting human or semi-human level capabilities of learning and decision making.

Machine Learning systems and algorithms are many and wide ranging: these algorithms have evolved over more than half a century of human effort and research.

Develop Your Own Next Generation of Governance Tools

The Power of AI

Passive and Active Learning

As this is a business-level discourse I will not elaborate on Machine Learning techniques and algorithms here however lets classify *all* Machine Learning systems into two broad categories, viz

i) A *Passive Learning* System which gathers historical data and learns in isolation.

ii) An *Active Learning* System which constantly interacts with its environment to gather data to improve its existing capabilities

Develop Your Own Next Generation of Governance Tools

The Power of AI
Existing Decision Support Systems mostly use Passive Learning

While Machine Learning is being increasingly used nowadays within our earlier-discussed Information Technology paradigms such as Business Analytics, BI and RPA, *the majority of these are Passive Learning Systems based on historical data.*

Develop Your Own Next Generation of Governance Tools

The Power of AI

Active Learning Systems for Organizational Governance

I suggest that advanced *Active Learning Systems* with ongoing environment interaction and data gathering be built to develop the next generation of organizational governance systems that will empower leaders to reach far greater levels of success and consistency in improving organizational performance across the *manifold control parameters that require to be dynamically updated in response to constantly changing environmental, political and market conditions.*

Develop Your Own Next Generation of Governance Tools

The Power of AI
Active Learning Sytems for Organizational Governance

Just as all the current advanced operational features of modern vehicles are sustained in a semi-autonomous car, so also can the earlier described paradigms of organizational performance management in our previous sections *co-exist in a complementary manner* with the next generation of Active Learning- based organizational governance systems when they are built.

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Interested to discuss further ?

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