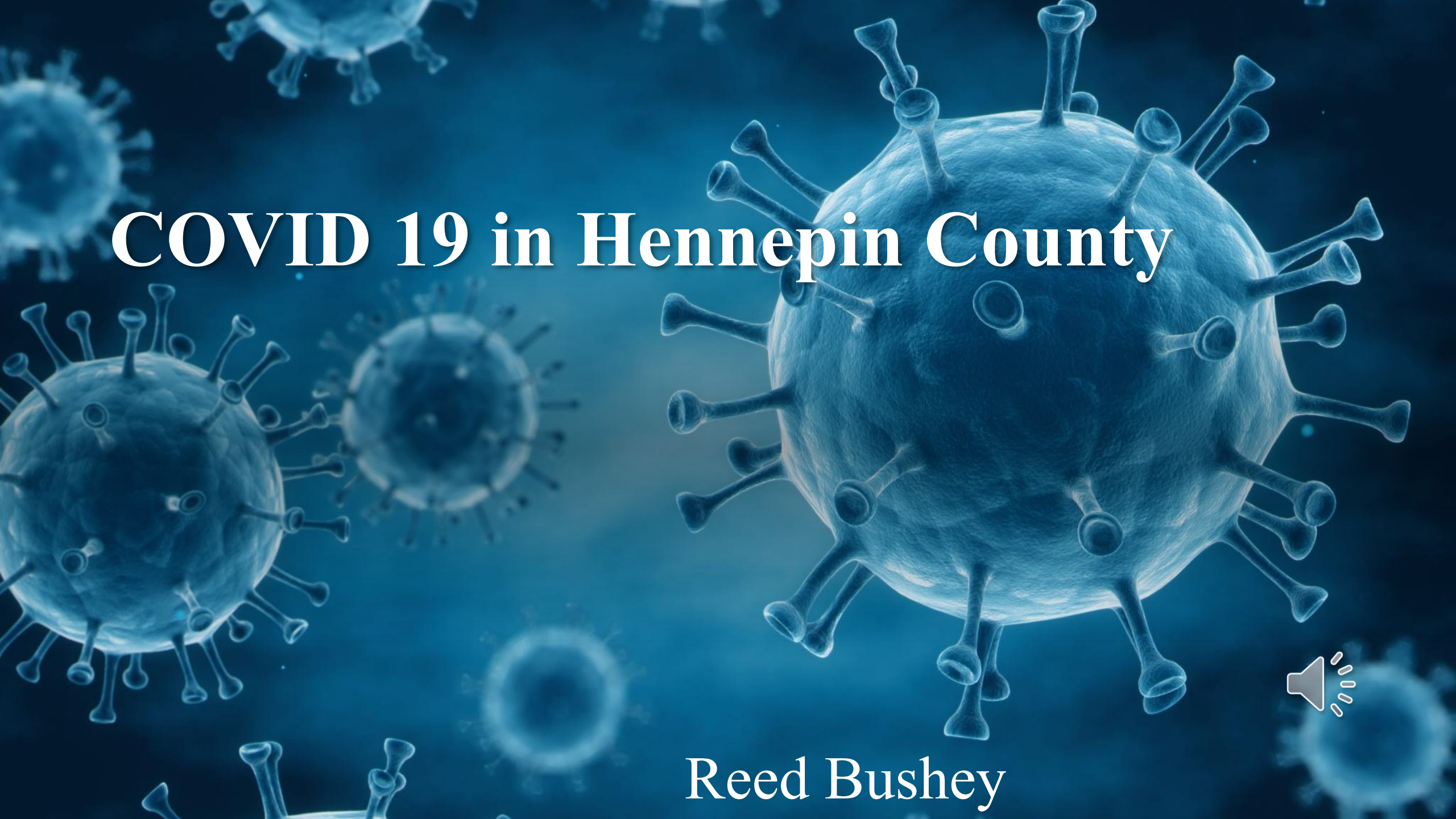
COVID 19 in Hennepin County

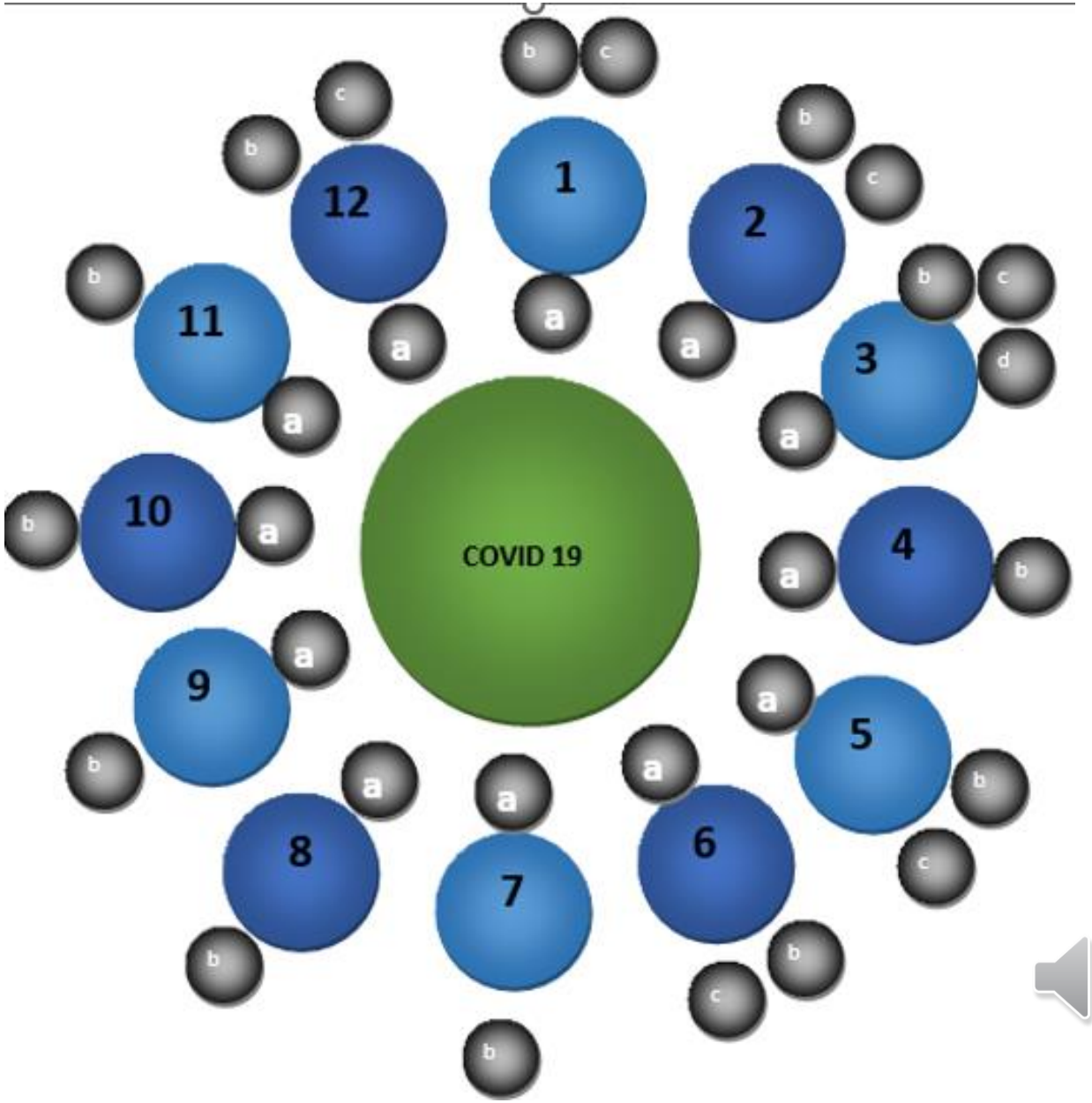


Reed Bushey

1.1 Framing the Domain

Key issue(s) or question(s)? (Exploratory **or** strategic)	Is there a focal issue or question to guide the project? Exploratory: **I AM FORCASTING THE Futures of COVID 19 IN Hennepin County BY 20 30**
Domain definition *(subject of the forecast)*	**The COVID 19 Global Pandemic**
Client	Real or imaginary client for whom the project is being carried out **Department of Health Hennepin County**
Geographic Scope	The area of the forecast **Hennepin County**
Time horizon	The approximate timeframe for the 3 horizons Example: H1 – now to 2025; **H2 2025-2030;** H3 2031+
Domain Map (Boundaries, Categories, What's in & What's out)	Separate template **STEEP BUBBLE DOMAIN MAP.**

DOMAIN MAP COVID 19



Epidemiological Data:

a.) Incidence Rates: Determine the number of new cases per unit of population over a specific time frame.

b.) Prevalence Rates: Assess the total number of cases in the population at a given point in time.

c.) Trends: Examine the patterns and trends of infection rates over time.

2. Demographics:

a.)Age Distribution: Analyze how different age groups are affected, considering vulnerability and severity.

b.) Gender Distribution: Explore whether there are variations in infection rates based on gender.

c.) Socioeconomic Factors: Assess the impact on different socioeconomic groups.

3. Healthcare System Capacity:

a.) Hospitalization Rates: Evaluate the proportion of cases requiring hospitalization.

b.) ICU Bed Occupancy: Understand the strain on intensive care units.

c.) Ventilator Usage: Assess the demand for ventilators and critical care resources.

d.) Healthcare Workforce: Examine the capacity of healthcare professionals to manage the caseload.

4. Testing and Contact Tracing:

a.) Testing Coverage: Analyze the percentage of the population tested and identify any gaps.

b.) Contact Tracing Effectiveness: Evaluate the ability to trace and isolate contacts of confirmed cases.

5. Public Health Measures:

a.) Lockdowns and Restrictions: Assess the impact and effectiveness of lockdowns and social distancing measures.

b.) Vaccination Coverage: Evaluate the progress of vaccination campaigns and their impact on infection rates.

c.) Public Compliance: Analyze the level of compliance with preventive measures.

6. Economic Impact:

a.) Business Closures: Evaluate the number and types of businesses affected by the pandemic.

b.) Unemployment Rates: Assess the impact on employment and livelihoods.

c.) Government Support: Consider the effectiveness of government interventions to support the economy.

7. Psychosocial Impact:

2.1 Current Assessment

Category	Description
Current conditions (important facts about the domain today)	**COVID 19** The community level of Covid-19 in Hennepin County is **low** based on cases and hospitalizations, according to the most recent update from the C.D.C. The number of **hospitalized Covid patients** has fallen in the Hennepin County area. **Deaths** have increased. The **test positivity rate** in Hennepin County is high. An average of **85 cases per day** were reported in Hennepin County, a **25 percent decrease** from the average two weeks ago. Since the beginning of the pandemic, a total of **387,288 cases have been reported**.

Stakeholders

(individuals or organizations that can influence the future of the domain)

The stakeholders involved in the COVID-19 pandemic response include a diverse range of entities, each playing a critical role in managing and mitigating the impact of the virus. Here are key stakeholders in the context of the COVID-19 pandemic.

Government and Public Health Agencies, High.

Healthcare Providers, High.

Researchers and Scientists, High.

Pharmaceutical and Biotech Companies, Med.

Non-Governmental Organizations (NGOs), Med.

Businesses and Employers, Educational Institutions, Low.

Media, International Organizations, High

International entities, Med.

Technology Companies, High.

History

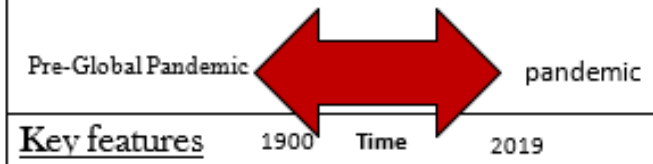
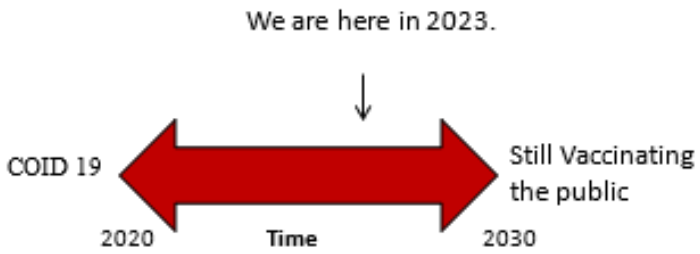
Recent past events within the domain

The COVID-19 era began with the emergence of a novel coronavirus, named SARS-CoV-2, and the subsequent outbreak of a respiratory illness known as COVID-19. The first cases were reported in December 2019 in the city of Wuhan, Hubei province, China. The World Health Organization (WHO) was alerted to several cases of pneumonia in Wuhan on December 31, 2019.

The virus quickly spread, leading to a global pandemic. The COVID-19 era has been characterized by widespread illness, public health measures, economic disruptions, and significant changes to daily life worldwide. Key events that marked the beginning of the COVID-19 era include: December 2019: Initial Cases in Wuhan, China: The first cases of a novel pneumonia were reported in Wuhan, with a link to a seafood market. The virus was later identified as a new coronavirus, named SARS-CoV-2. January 2020: Global Spread: Cases of COVID-19 began to appear outside of China, marking the virus's international spread. The WHO declared the outbreak a Public Health Emergency of International Concern on January 30, 2020. March 2020: Pandemic Declaration:

As the virus continued to spread globally, the WHO declared

2.2 Era Analysis

Previous Era	Current Era
	
Key features • Pre-COVID-19: While public health was important, there was not a global focus on pandemic preparedness to the extent seen post-COVID-19. • Remote Work and Digital Transformation: • Pre-COVID-19: Remote work and digital transformation were ongoing trends but not universally adopted. • Global Travel and Tourism: • Pre-COVID-19: International travel and tourism were booming. • Pre-COVID-19: Vaccine development timelines were typically longer, and there was not as much emphasis on rapid global vaccine distribution. • Health and Safety Protocols: • Pre-COVID-19: Health and safety	Differences from previous era • Post-COVID-19: There has been a significant increase in awareness and investment in public health infrastructure, research, and global cooperation to prevent and respond to pandemics. • Post-COVID-19: Remote work became widespread, accelerating digital transformations across industries. Hybrid work models and reliance on technology have become more ingrained in work culture. • Post-COVID-19: Travel restrictions, quarantine measures, and changes in consumer behavior have significantly impacted the travel and tourism industry. Recovery has been gradual, with ongoing shifts in travel patterns. • Vaccine Development and Distribution: • Post-COVID-19: Unprecedented efforts led to the development of multiple COVID-19 vaccines in record time. Global vaccination campaigns aimed to curb the spread of the virus, with challenges related to distribution, equity, and access.

2.3.1 Scanning Hits

SOCIAL

Scanning Hit Template

Title	The title of the piece **Social Consequences of the COVID-19 Pandemic. A Systematic Review**		**Author**	The primary author of the piece **Hosseinzadeh, P**			
Source	Citation and link (if available) **Hosseinzadeh, P., Zareipour, M., Baljani, E., & Moradali, M. R. (2022). Social Consequences of the COVID-19 Pandemic. A Systematic Review. Investigación Y Educación En Enfermería, 40(1). https://doi.org/10.17533/udea.iee.v40n1e10** **In-text citation: (Hosseinzadeh et al., 2022)**		**Date**	The date the piece appeared **2022**			
STEEP Categories	The one or more STEEP categories the piece relates to **SOCIAL**		**Keywords**	Other important terms that describe the piece **COVID-19, coronavirus, pandemics, impacts on health, systematic review**			
Type	**Actual event**	**New trends**	**New cycle**	**New plan**	**Potential event**	**New info**	**New issues**
	Already happened, but few know about and implications not fully developed **Global Pandemic**	Consistent increase or decrease, more or less of something over time	Recurring increase and decrease, more and then less of	Publicly announced intentions	A potential happening or occurrence	Information that has just been released	Debate, conflict, decision, "Should we/they..."

Brief description of the item	A short paragraph describing the event or the new piece of information. What happened or what new information appeared? **The COVID-19 pandemic, caused by the novel coronavirus SARS-CoV-2, emerged in late 2019 and rapidly escalated into a global crisis. Characterized by its high transmission rate and potential for severe respiratory illness, the virus prompted widespread lockdowns, travel restrictions, and unprecedented public health measures across the world. Governments, healthcare systems, and individuals faced significant challenges in containing the virus's spread and mitigating its impact. The pandemic not only strained healthcare infrastructure but also had profound social, economic, and psychological consequences. Efforts to combat the virus included mass vaccination campaigns, extensive testing, and ongoing research to understand the virus and develop effective treatments. The global response to COVID-19 underscored the interconnectedness of our world and the need for collective action in the face of health crises.**	
How could the future be different as a result?	A brief comparison about the future before and after this event. How does the future change a result? **Emergency Declarations: In response to the pandemic, federal, state, and local governments declared emergencies, granting them special powers to allocate resources, enforce public health measures, and coordinate response efforts.** **Stimulus Packages: The U.S. government implemented multiple stimulus packages, including the CARES Act, to provide financial relief to individuals, businesses, and healthcare systems. The political process of negotiating and passing these packages reflected bipartisan cooperation, but also exposed political divisions.** **Public Health Measures: The implementation and enforcement of public health measures, such as mask mandates and lockdowns, became politically charged issues. Debates over the balance between public health and economic considerations underscored political polarization.**	
What are the potential implications for ...?	**...Stakeholder name,**	**Healthcare System Strain: Loss of Lives, Economic Disruptions, Remote Work and Education Mental Health Challenges, Racial and Socioeconomic Disparities Vaccination Challenges, Changing Social Norms.**

Horizon	H1 Confirming (baseline scenario) confirms the baseline future	H3 Resolving (between scenarios) indicates one scenario becoming more probable	H5 Creating (new scenario) indicates a potential new scenario	**Impact (0-5)** How much is this event or information likely to change the future for that person, group or domain. *5*	**Plausibility (0-5)** How likely will this change actually affect the future? *5*
Scanner	The person submitting the hit **Reed Bushey**		**Date Submitted** **11/02/2023**	**Novelty (0-5)** How new is this event or piece of information to those involved? *5*	**Timeliness (0-5)** Is the source reputable? Are there confirmations elsewhere? *5*

2.3 Scanning Hits

TECHNOLOGICAL

Scanning Hit Template

Title	The title of the piece **The Internet and the Pandemic**	**Author**	The primary author of the piece **McClain, C.**
Source	Citation and link (if available) McClain, C., Vogels, E., Perrin, A., Sechopoulos, S., & Rainie, L. (2021, September 1). The Internet and the Pandemic. Pew Research Center: Internet, Science & Tech; Pew Research Center. https://www.pewresearch.org/internet/2021/09/01/the-internet-and-the-pandemic/ In-text citation: (McClain et al., 2021)	**Date** **11/06/2023**	The date the piece appeared **01/09/2021**
STEEP Categories	The one or more STEEP categories the piece relates to **TECHNOLOGICAL**	**Keywords**	**COVID 19**

Type	**Actual event**	**New trends**	**New cycle**	**New plan**	**Potential event**	**New info**	**New issues**
	Already happened, but few know about and implications not fully developed.	Consistent increase or decrease, more or less of something over time	Recurring increase	Publicly announced	A potential happening	Information that has just	Debate, conflict,

2.3.3 Scanning Hits

ENVIRONMENTAL

Scanning Hit Template

Title	The title of the piece **Environmental effects of COVID-19 pandemic and potential strategies of sustainability**	**Author**	The primary author of the piece. **Rume, T**
Source	Citation and link (if available) **Rume, T., & Islam, S. M. D.-U. (2020). Environmental Effects of COVID-19 Pandemic and Potential Strategies of Sustainability. Heliyon, 6(9).** **https://doi.org/10.1016/j.heliyon.2020.e04965** **In-text citation: (Rume & Islam, 2020)**	**Date** **11/06/2023**	The date the piece appeared **01/09/2020**
STEEP Categories	The one or more STEEP categories the piece relates to **ENVIRONMENTAL**	**Keywords**	Other important terms that describe the piece • **Environmental assessment** • **Environmental pollution** • **Environmental management** • **Environmental sustainability** • **COVID-19** • **Public health**

2.3.4 Scanning Hits

ECONOMIC

Scanning Hit Template

Title	The title of the piece **The U.S. Economy and the Global Pandemic.**		**Author**	The primary author of the piece **White House Press Secretary**			
Source	Citation and link (if available) **The U.S. Economy and the Global Pandemic. (2022). In The White House.** **https://www.whitehouse.gov/wp-content/uploads/2022/04/Chapter-3-new.pdf** **In-text citation: ("The U.S. Economy and the Global Pandemic," 2022)**		**Date**	The date the piece appeared. **01/04/2022**			
STEEP Categories	The one or more STEEP categories the piece relates to **ECONOMIC**		**Keywords**	Other important terms that describe the piece **Economic impact of COVID 19**			
Type	**Actual event**	**New trends**	**New cycle**	**New plan**	**Potential event**	**New info**	**New issues**

2.3.5 Scanning Hits

POLITICAL

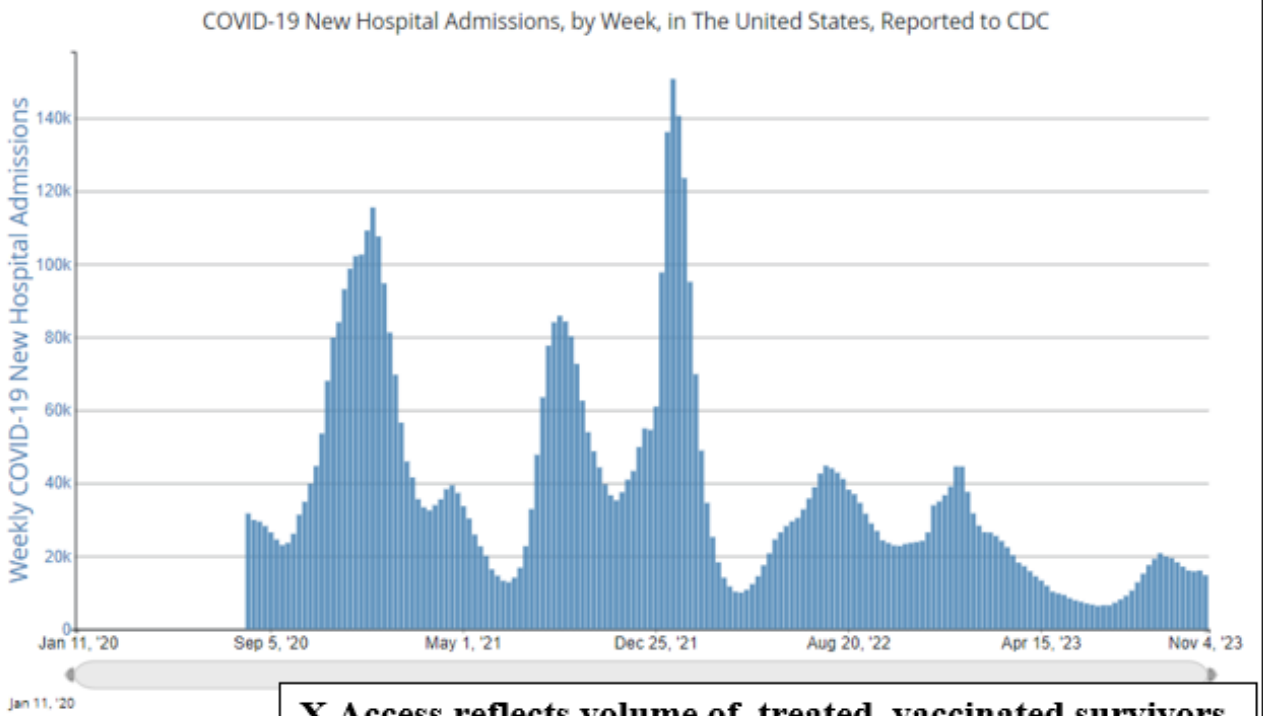
Scanning Hit Template

Title	The title of the piece **The Human, Economic, Social, and Political Costs of COVID-19**		**Author**	The primary author of the piece **Matteo Bonotti,**			
Source	Citation and link (if available) Bonotti, M., & Zech, S. T. (2021). The Human, Economic, Social, and Political Costs of COVID-19. Recovering Civility during COVID-19, 1–36. ncbi. https://doi.org/10.1007/978-981-33-6706-7_1 In-text citation: (Bonotti & Zech, 2021)		**Date** **03/03/2021**	The date the piece appeared **03/03/2021**			
STEEP Categories	The one or more STEEP categories the piece relates to **POLITICAL**		**Keywords**	Other important terms that describe the piece **COVID 19**			
Type	**Actual event**	**New trends**	**New cycle**	**New plan**	**Potential event**	**New info**	**New issues**

3.1 Baseline Future Inputs

Trends	Reported by the CDC, Chart References Vaccination Quantities or changes that move incrementally in a direction over a long period of time.

Y Access reflects volume of ,untreated, unvaccinated casualties.



X Access reflects volume of treated, vaccinated survivors.

In conclusion, the ramifications of COVID-19 reach far beyond public health, impacting global stability and conflict resolution. To effectively tackle the diverse challenges posed by the pandemic, a comprehensive and proactive strategy is imperative. This approach must not only address public health concerns but also safeguard global stability and conflict resolution mechanisms.

Trend 1.)

The Vulnerability of Conflict-affected Populations

The populations of conflict-affected countries – whether those in war or suffering its after-effects – are likely to be especially vulnerable to outbreaks of disease.

Trend 2.)

Damage to International Crisis Management and Conflict Resolution Mechanisms

One reason why refugee and IDP populations are likely to be especially vulnerable to COVID-19 is that the disease could severely weaken the capacity of international institutions to serve conflict-affected areas.

Trend 3.)

Risks to Social Order

COVID-19 could place great stress on societies and political systems, creating the potential for new outbreaks of violence.

Trend 4.)

Political Exploitation of the Crisis

Against this background of social pressures, there is ample room for political leaders to try to exploit COVID-19, either to solidify power at home or pursue their interests abroad.

Trend 5.)

A Turning Point in Major Power Relations?

The potential effects of COVID-19 on specific trouble spots is magnified by the fact that the global system was already in the midst of realignment.

Trend 6.).

Opportunities to Be Seized

While the warning signs associated with COVID-19 are significant, there are also glimmers of hope. The scale of the outbreak creates room for humanitarian gestures between rivals.

Plans	**Publicly announced intention by any stakeholder to create change in the future.** To eliminate the COVID-19 virus promptly by disseminating timely information to the public, facilitating the swift initiation of emergency aid services. Stakeholders employ a comprehensive system response protocol that emphasizes medical infrastructure support. This assistance is accessible across all sociodemographic levels, ensuring unrestricted availability of assisted respiratory support. The formulation of a mission, objectives, and strategies is underway to galvanize individuals and resources towards a shared vision and common goals. "As the world continues to grapple with COVID-19's far-reaching impacts, there remains an urgent need for enhanced political engagement and coordination to end the acute phase of the COVID-19 pandemic. The COVID-19 Pandemic Prioritized Global Action Plan for Enhanced Engagement ("GAP") builds on current global COVID-19 response activities and commitments made at events such as the Global COVID-19 Summits to bring together partners who can commit political will, leadership, and resources to help address acute needs strengthen readiness from a across geographical and/or sectoral perspectives, or both." **(COVID-19 Pandemic Prioritized Global Action Plan for Enhanced Engagement (GAP) - United States Department of State, 2022)**
Projections	**Public forecasts that might influence what people expect to happen.** Eradication the COVID 19 virus through vaccination, the stakeholders have a multifaceted system response procedure that focusses on infrastructural medical support. The support is available and in place at all sociodemographic levels not restricting access to assisted respiratory support. Vaccinations made mandatory for some employers and free to the public. Facial coverings made mandatory for first two years. Report from one county about. "Assuming that we have observed a time series of COVID-19 incidence cases up to a time t, our goal is to make predictions of incidence cases in the next two to three weeks. In an ideal scenario, all data sets would be calibrated to the time of infection (an admitted impossibility). However, publicly available data sets most often reflect the date of reporting, which may be the date of reporting to the local health department, but more often reflects the date of reporting up the chain, such as to the State health department. " (Zhao et al., 2021) **(Situation Update for COVID-19 - MN Dept. Of Health, n.d.)**

CYCLES	Quantities or changes in the domain that recur. I find this domain to be ageing, there are instances that date back over 20 years and the naming convention in use here does speak to that as they are all SARS something. The five examples below clearly show a Governance Malfeasance, to have control of the SARS-CoV for 21 years and not destroyed it isn't good. "The past two decades have seen three major pathogenic zoonotic disease outbreaks caused by beta coronaviruses. Severe acute respiratory syndrome coronavirus (SARS-CoV) emerged in 2002, infecting ~8,000 people with a 10% mortality. Middle East respiratory syndrome coronavirus (MERS-CoV) emerged in 2012 with ~2,300 cases and 35% mortality. The third, SARS-CoV-2, causes the severe respiratory disease coronavirus disease 2019 (COVID-19) First reported in China in December 2019, it rapidly became a pandemic with devastating effects. The June 21, 2020 World Health Organization (WHO) Situation Report records over 8.7 million COVID-19 cases and 460,000 deaths, numbers that increase daily. Humans have no direct immunological experience with SARS-CoV-2, leaving us vulnerable to infection and disease. " **(Situation Update for COVID-19 - MN Dept. Of Health, n.d.)**
Constants	**Conditions or quantities that are expected not to change before the time horizon.** The given constants Transmission rate, CFR, Incubation Periods and the Viral Load are shown below. These are basic point of interest. "**Transmission Rate** (R_0): This constant represents the average number of secondary infections produced by one infected individual in a population that is entirely susceptible to the virus. **Case Fatality Rate** (CFR): CFR is the proportion of deaths from a specific disease compared to the total number of confirmed cases. **Incubation Period:** The incubation period of COVID-19 is the time it takes for an individual to develop symptoms after exposure to the virus. **Viral Load:** Viral load refers to the amount of virus present in an infected individual, and it plays a role in disease transmission."

3.4 Alternative Future Inputs

Key Uncertainties	**Key Uncertainties** Virus Variants and Mutations: The SARS-CoV-2 virus that causes COVID-19 has demonstrated the ability to mutate, leading to the emergence of new variants. The extent to which these variants would affect the transmissibility, severity of illness, and vaccine efficacy was uncertain. Monitoring and understanding the impact of new variants on the trajectory of the pandemic were crucial for public health strategies and vaccine development. Vaccine Rollout and Global Access: The distribution and administration of COVID-19 vaccines were underway, but the global rollout faced challenges related to production capacity, distribution logistics, and equitable access. The speed at which vaccines could be distributed to different parts of the world and the extent to which populations could be immunized were uncertainties. Ensuring fair and widespread access to vaccines was critical for achieving herd immunity and controlling the spread of the virus.

Events	**Expected or Unexpected Events and Wild Cards .** The COVID 19 virus has to date killed an estimated 6,985,964 deaths, reported to WHO as of 2022. **"**One of the wild card events on our radar for some years is a global pandemic that might kill millions.**"** (COVID-19: A Wild Card Event, n.d.)
Issues	**Issues Currently Being Discussed.** There is concern about activities and access to specific places and weather or not the Vaccines are good. **"**Vaccine Mandates and Passport Systems: Discussions and debates were ongoing regarding the implementation of vaccine mandates for certain activities or access to specific places. Effectiveness and Safety of Vaccines: Concerns and debates persisted around the safety and efficacy of COVID-19 vaccines. **"**

Key Uncertainties	**Key Uncertainties** The understanding of infectious diseases and pandemics has deep historical roots, attributing a specific prediction of the COVID-19 pandemic to Eddy's statement may be an over interpretation, as it lacks the concrete evidence of foreseeing the unprecedented circumstances of the 2019-2020 pandemic. “ **#1**. As if writing prophetically about the global COVID-19 pandemic, in 1984 Eddy suggested, ‘Uncertainty creeps into medical practice through every pore. (Koffman et al., 2020) **#2.** COVID-19 has governments at all levels operating in a context of radical uncertainty. “ (OECD, 2020)

Story about Fred

Morning Rituals

The aroma of freshly brewed coffee filled Fred's modest apartment as he prepared for another day of challenges and growth. Amidst the uncertainty of the COVID-19 pandemic, Fred, a college student pursuing a master's in information and communication technologies. was also a dedicated technician working with the public. His day began with a hearty breakfast—fuel for the dual roles he played in an evolving world.

Sitting at his kitchen table, Fred scrolled through news updates on his laptop. The pandemic had thrust the world into a digital revolution, and Fred found himself at the forefront of this transformation. With a bite of his toast, he reviewed the day's schedule, a mix of virtual support sessions and online classes.

In the midst of the COVID-19 pandemic, Fred found himself at the intersection of technology and human connection. As a dedicated technician, he became an essential figure in his community, helping people navigate the challenges of a suddenly digital-dependent world. Simultaneously, Fred was pursuing a Masters in Information and Communication Technologies. A testament to his unwavering commitment to personal and professional growth.

Days were a delicate balancing act for Fred. Mornings and afternoons were dedicated to his role as a troubleshooter, ensuring that individuals and businesses stayed connected virtually. With a laptop bag slung over his shoulder and determination in his eyes, Fred moved from one client to another, addressing technical issues, from setting up secure virtual networks to troubleshooting video conferencing glitches.

Evenings belonged to academia. With textbooks spread across his dining table, Fred delved into the intricacies of information systems, networking, and the evolving landscape of communication technologies. The challenges of pandemic life seemed to amplify his resolve, and Fred embraced the juggling act, determined to emerge from the crisis with newfound skills and knowledge.

Connection Amidst Chaos

As the pandemic wore on, Fred's journey became a story of connection amidst chaos. His clients, often facing the isolating effects of lockdowns, found solace not only in the solutions to their technical problems but in Fred himself. A once purely technical job became a lifeline for those grappling with the emotional toll of the pandemic.

One poignant encounter involved a small business owner named Sarah. Faced with the sudden need to shift her operations online, Sarah was on the verge of closing shop. Fred, with a reassuring smile and technical expertise, not only helped her establish a robust online presence but also shared insights from his academic pursuits, guiding her toward a sustainable and tech-savvy business model.

Simultaneously, Fred's academic journey benefited from real-world application. The challenges he encountered on the job fueled his academic curiosity, creating a symbiotic relationship between his professional and educational pursuits. The theoretical knowledge gained in his Masters program enriched his problem-solving abilities, making him an even more invaluable asset to his community.

Dressed in a casual shirt and jeans, Fred carried his laptop bag and headed out into the city. His role as a technician required him to be a problem solver, a connector in a time when physical distances seemed insurmountable. Fred's toolkit wasn't just filled with cables and devices; it also included empathy and patience; virtues that became increasingly crucial as the months of the pandemic wore on.

1 Growth

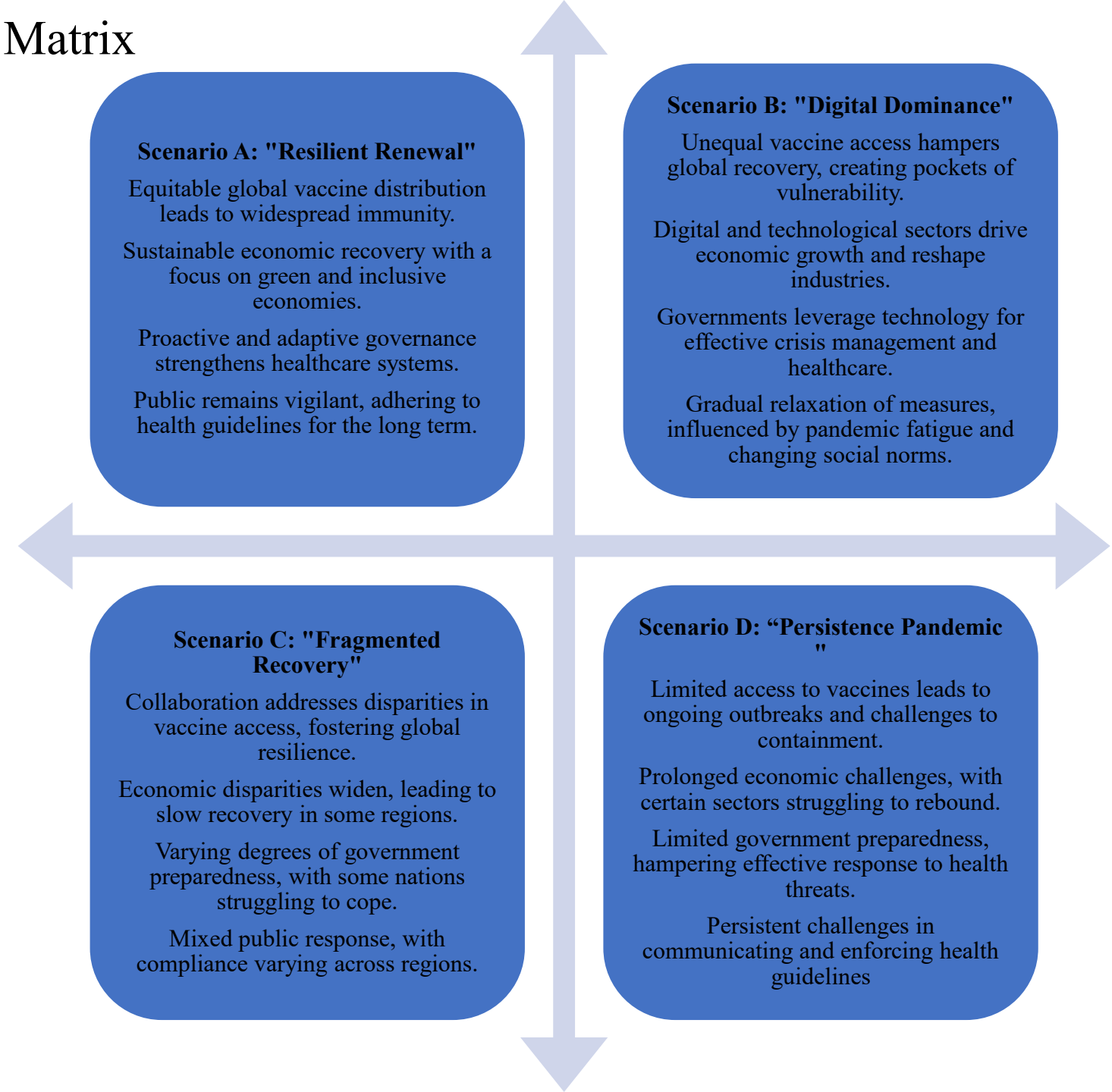
As the world slowly emerged from the grip of the pandemic, Fred found himself on the brink of graduation. His academic journey, coupled with his experiences as a technician, had transformed him into a well-rounded professional. The challenges of the past years had refined his ability to adapt, innovate, and, above all, connect.

Surrounded by friends, family, and colleagues, Fred expressed gratitude for the support of those around him and acknowledged the profound impact the pandemic had on shaping his path. His story became an inspiration to others, a testament to the possibilities that arise when one embraces challenges as opportunities for growth.

Fred's journey as a technician and a student during the COVID-19 pandemic painted a vivid picture of resilience, adaptability, and the power of simultaneous personal and professional development. As the world continued its recovery, Fred stood at the forefront of progress, ready to contribute his unique blend of technical expertise and human connection to a rapidly evolving digital landscape.

KEY ASSUMPTIONS		IMPORTANT UNCERTAINTIES
Vaccination as a Cornerstone: Global vaccination efforts have BEEN successful.		**Virus Evolution and Variants:** The trajectory of the virus evolution remains uncertain.
Adaptive Public Health Measures: Governments and health organizations adopt a flexible approach to public health.		**Global Equity in Vaccine Access:** The equitable distribution of vaccines across countries may face hurdles.
International Collaboration and Information Sharing: Continued international cooperation.		**Public Compliance and Behavior:** The long-term adherence of the public to health guidelines is uncertain.
Economic Resilience: Economies recover from the pandemic's impact.		**Government Preparedness:** The ability of governments to adapt and respond to future challenges.
Technological Integration: Accelerated digital transformation persists.		**Economic Transformation:** The extent and sustainability of economic recovery are uncertain.

Alternative Futures Matrix




Thank You!

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