

Applied Data and Analytics for Economic Development

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What is Economic Development?

Planning, Organizing, and Acting to
Support the Economy

Common end goals:

Job stability
and creation

Tax base
stability and
growth

Diversification
of economy
and tax base

Wealth
creation and
diversification



Economic Development is Accomplished Through...

Tools and techniques:

- Business retention and expansion
- Business attraction
- Global trade and foreign investment
- Workforce development
- Business technical assistance
- Innovation and entrepreneurial support
- Quality of place/place-based development
- Community development

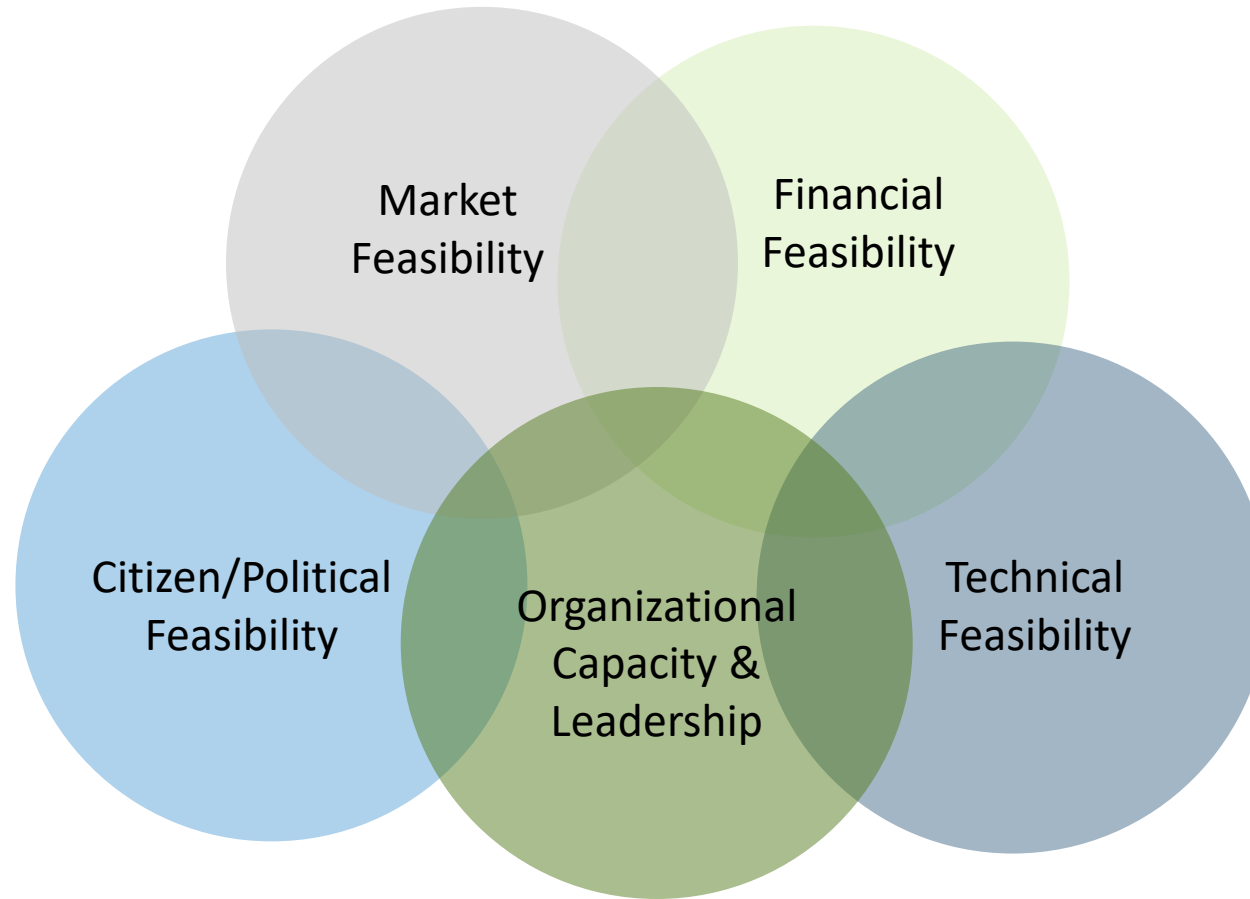
As well as:

- Planning
- Organizing
- Implementation
- Resource development

And more!



Ingredients for a Successful Economic Development Project, Initiative, or Plan





Typical Analytical Services in Economic Development

Economic Base – employment, establishments, wages, labor market, occupations

Demographics and Socioeconomic – population, income, education, demographic characteristics of the population

Targeted Industry Sectors and Clusters – historic and projected trends in industry sectors, groups, clusters – employment, establishments, sales, wages, occupations

Business Intelligence and Lead Generation – to support business attraction

Innovation and Entrepreneurship – R&D, venture capital, patents, technology transfer, start-ups

Supply Chain - analysis upstream (buy from) and downstream (sell to) relationships and economics for major industry

Workforce - current and future workforce supply, demand, and gaps, labor market, education levels and completions, occupation and skills analysis



Typical Analytical Services in Economic Development

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Market Feasibility - economic market supply and demand

Financial Feasibility - cost vs benefits, return on investment, and can the project be financed

Economic Impact - impact in terms of jobs, sales, revenues loss and gains from a development or change in economic activity

Fiscal Impact - impact on government financial conditions (revenues vs costs)

Sensitivity Analysis – demonstrating need and impact of an economic incentive

Competitive Analysis – comparison of one area to another to assess competitiveness for investment



Applied Data Challenges

- **North American Industry Classification System (NAICS) and Standard Occupation Classification System (SOCS) limitations** – not all industries and jobs easy to define
- **Geography limits and challenges** – unavailable data, custom geographies i.e., small communities, rural areas, plus not all data available at all levels
- **Timeframe** - different years in past can produce different results (ex: when there is a shock such as Covid; 2008 - the years you pick matter! Also, geographic definitions can change over time making data non-consistent
- **Data is imperfect** - might not be available for what you want to measure - ex: fishing employment data not reported, need to use proxy of licenses issued
- **Rapid change** - in economy, culture creating need for new data - e-commerce, remote work, automations, more
- **Lack of analytics capacity** - within organizations and systems
- **And more!**



“All models are wrong, some are useful”

George Box, 1976 paper published in the
Journal of the American Statistical Association

Principles for Effective Data Usage

The world is complex and changes rapidly, and with this comes uncertainty. Therefore, data must be used to...

Inform, Not Predict



Inform, encourage thinking, ask and share engaging questions, build capacity, and collaborate.

Explore and Explain



Explore emerging issues, challenges, opportunities, and possibilities, and to explain, understand, measure, and evaluate.

Build Trust



Document sources, use multiple sources, and understand and share assumptions and limitations.

Lead Action




Avoid paralysis by analysis through continuous cycles of acting, learning, adapting, and transforming.



The Challenge: Historical “best practices” are increasingly not working in a constantly changing, unpredictable world

- **Technological** – Tech of Everything– Agtech, Cleantech, Healthtech, Fintech, Manufacturing 4.0, Digital Platforms as service, etc.....,
- **Pandemics/Biological Events**
- **Climate Change**
- **Globalization**
- **Political and Cultural Polarization** stemming from erosion of middle class (short-term work, gig economy, multiple jobs to survive, K-Shaped recoveries, continued inequities)



And “best practices” are failing to meet a social. cultural, economic emphasis on the goals of:

- Resiliency
- Sustainability
- Equity and Inclusion



The Challenge of Navigating within a New Economic Future:

- The world is changing, and change happens rapidly” – tech, economy, climate, culture
- We no longer can rely solely rely on “best practices” and “modeling to predict”
- We must get comfortable with “acting amidst the unknown” being adaptable to change
- New ways, skills, and tools of are needed for:
 - Thinking, planning, acting
 - Analyzing, strategizing, collaborating, and implementing
 - Building capacities for adapting



Data/Metrics

Traditional

Near-term
ROI Based
Market Feasibility
Financial Feasibility
Economic and Fiscal Impact
Economic Trends and
Projections
Used to Explain and Predict

Emerging – Future

Long-term
Capacity Building/Adaptability
Based
Network Presence & Strength
Collective Impacts
Social Impacts
Applied Foresight and What-if
Scenarios
Used to Inform – generate
engaging questions and
discussing possibilities



Tools and Techniques for Measurement and Assessment

Recent & Past	Emerging	Applied Future
Capacities for planning, organizing, and implementing – organization and stakeholder performance; economic growth	Capacities for engaging networking and building ecosystems - network mapping and analysis, collective impact; capacities for innovation; emerging trends	Capacities to identify, anticipate, prepare, and adapt
Data: trends in employment, occupations, wages, business establishments, real estate and industry market trends, supply chains, trade, sociodemographic	Data: R&D, investment, commercialization entrepreneurship; market projections; remote work, gig work, automation; social impact	Data: Foresight and futures dialogues on what may happen if a trend developed or a transformative event occurs
All can be useful and should be considered within process		



Integrating Applied Foresight: Trends – Emerging Trends - Weak Signals

Trends

- It has and is happening
- How intense is it and will it continue to be and for how long?

Emerging Trends

- It's starting to happen
- Will it continue
- How intense is it and will it be and for how long?

Weak Signals

- There seems to be something out there
- It may or may not happen
- What might it be?



Examples Trends – Emerging Trends - Weak Signals

Trends

Semi Autonomous
Vehicles

Climate Change

Mix of Gig and Wage
Workers

3D Printing

Institutional and
Corporate Ownership
of Information

Emerging Trends

Fully Autonomous
Vehicles

Frequent and Severe
Climate Events

Protections and
Regulations for Gig
Workers

3D Printing for Larger
Scale, Turbines, Boats,
Buildings

Increased Individual
Privacy Protections

Weak Signals

Driver-Free and/or
Vehicle Free Districts

Sustained Climate
Catastrophes

All Workers as
“Independent Agents”
Rights, and Benefits

3D Printing of
Biologicals

Individual Ownership of
Information



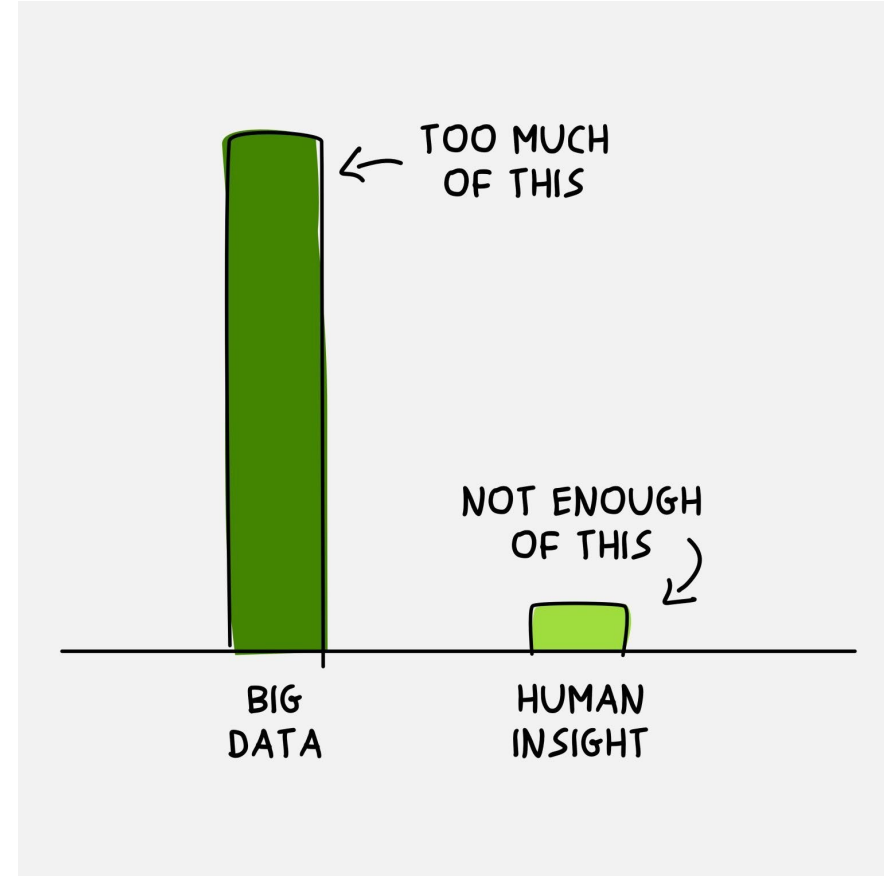
Applied Data Challenges & Opportunities

- Digital platforms and tools
- Big data/data science techniques –access, clean and normalize, analyze, visualize
- Application Programming Interface (API) – enables communication and data sharing/integration between multiple programs using standard set of protocols
- People analytics – market and consumer analysis, workforce/talent analysis
- Geospatial analytics
- Artificial Intelligence – synthetic data
- Open Data
- Transparency, privacy, data ethics
- Humanizing data – proving meaning understanding, relevancy
- And more!

Applied Data Challenges & Opportunities

With the amount of data and analytic tools now readily available, providing meaning, understanding, and insights are more important than ever.

This includes using for engaging dialogue, seeking connection among multiple points of information, and synthesizing to support strategy and action.



For More Information

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