

systemic design for social complexity

**RSD<sup>5</sup>**  
SYMPOSIUM

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## **Eudaimonic Flourishment through Healthcare System Participation in Annotating Electronic Health Records**

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## **The Big Idea -**

*If the Food System Creates Conditions for People to be Nourished  
Nourishment is the Output of that System*

*If The Public Health System Creates Conditions for People to Flourish  
Flourishment is the Output of that System*

Also

*if The Food System is to be Regulated  
Nourishment Needs to be Recorded, Accounted and Analyzed*

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## **Who am I:**

*Pharmacy Professor trained in Neuroscience, Biophysics, Medical & Pharmaceutical Sciences, and Data*

## **What do I Do**

*Critically and abductively analyze observations by framing them in explicit but approximate simulations whose value and meaning are bounded by the record of observations (data)*

## **Why am I Here**

*I think that System Design is another form of explicit approximate simulation of possible futures and that dialogue (conversations) is how we bound their meaning and value*

## **What do I Offer**

*I have tools for creating know-nothing data about observations and conversation (quantitative and qualitative records)*

# ***METACOGNITIVE FRAMEWORK***

***DATA FROM PAST TRANSLATED INTO KNOWLEDGE FOR GUIDING FUTURE ACTIONS***

***Input :Data/Information Biased by Present Concerns and Future Needs (Know Nothing)***

|  | <b><i>Design</i></b>         | <b><i>Learning</i></b>                | <b><i>Problem Solving</i></b> | <b><i>Diagnostics</i></b>                  | <b><i>Systems Engineering</i></b> | <b><i>Knows</i></b> |
|--|------------------------------|---------------------------------------|-------------------------------|--|-----------------------------------|---------------------|
| <b>PAST</b>  |                              |                                       |                               |  |                                   |                     |
| <b><i>Orient/Explore/Discover</i></b><br><b><i>(thoughtful comparison)</i></b> | Comprehension<br>Knowledge   | Discovery<br>Definition               | Initiation<br>Probing         | Identify Objectives<br>Specify Criteria    | What<br>Seems to Be               |                     |
| <b>PRESENT</b>   |                              |                                       |                               |  |                                   |                     |
| <b><i>Scan/Form/Re-Form</i></b><br><b><i>(reasoned reflection)</i></b>         | Analysis<br>Synthesis        | Divergent Design<br>Convergent Design | Analysis<br>Diagnosis         | Map Relationships<br>Identify Alternatives | What<br>Could Be                  |                     |
| <b>FUTURE</b>  |                              |                                       |                               |  |                                   |                     |
| <b><i>Project/Develop/Specify</i></b><br><b><i>(practical abstraction)</i></b> | Validation<br>Transformation | Action Planning<br>Mobilization       | Reporting<br>Prescribing      | Evaluate Alternatives<br>Chose One or Two  | What<br>Ought to Be               |                     |

***Output : Actionable Knowledge Useful in Integrating Past/Present/Future (Know Why)***

| <b>Brain Network</b> | <b>Warrant<br/>(Perspective)<br/>Meaning</b>                   | <b>Aristotelian Activities</b><br>essence ↔ effects |        |                       |
|----------------------|--|---|--------|-----------------------|
| Salience             | <b>Empowerment</b><br>(Systemic-Scholarly)<br><b>Coherence</b> | Theoria<br>theorizing                               | ↔<br>↔ | Episteme<br>science   |
| Executive Control    | <b>Agency</b><br>(Business-Professional)<br><b>Purpose</b>     | Praxis<br>acting                                    | ↔<br>↔ | Phronesis<br>judgment |
| Default              | <b>Engagement</b><br>(Socio-Cultural)<br><b>Significance</b>   | Pioesis<br>making                                   | ↔<br>↔ | Techne<br>proficiency |

# **How Do We Know What, How, and Why?**

**= From a Humanities perspective  
we reason**

**= From a Neuroscience perspective  
our brain network interact**

**Health**

**= Bio-Psycho-Social Wellbeing  
(Essence)**

**= Flourishing People  
(Effect)**

# **Inclusive Eudaimonic Systemic Design**

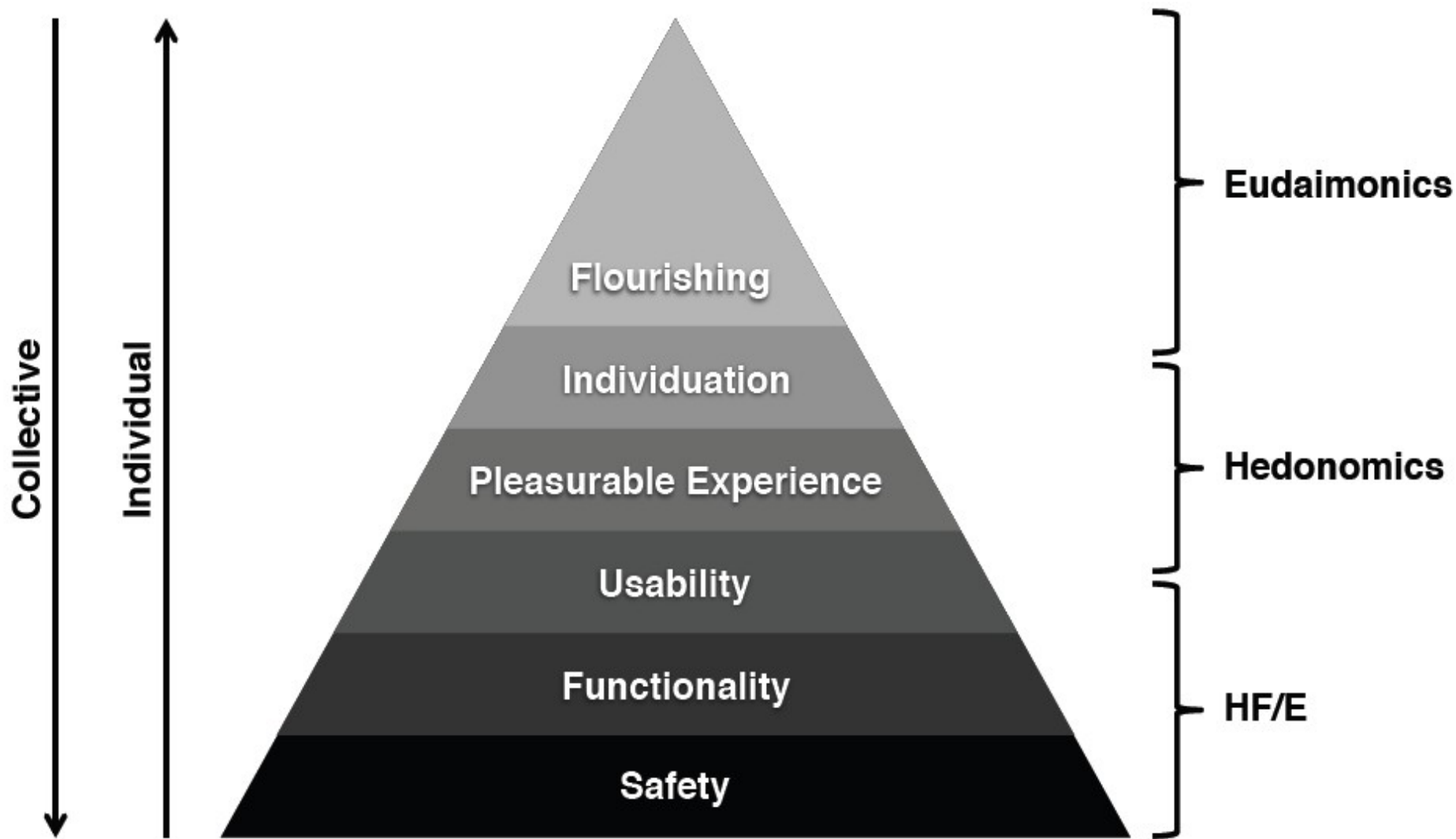
**The Aristotelian concept of Eudaimonia refers to living a flourishing life through the pursuit of one's best self (i.e., one's *deamon* or true spirit).**

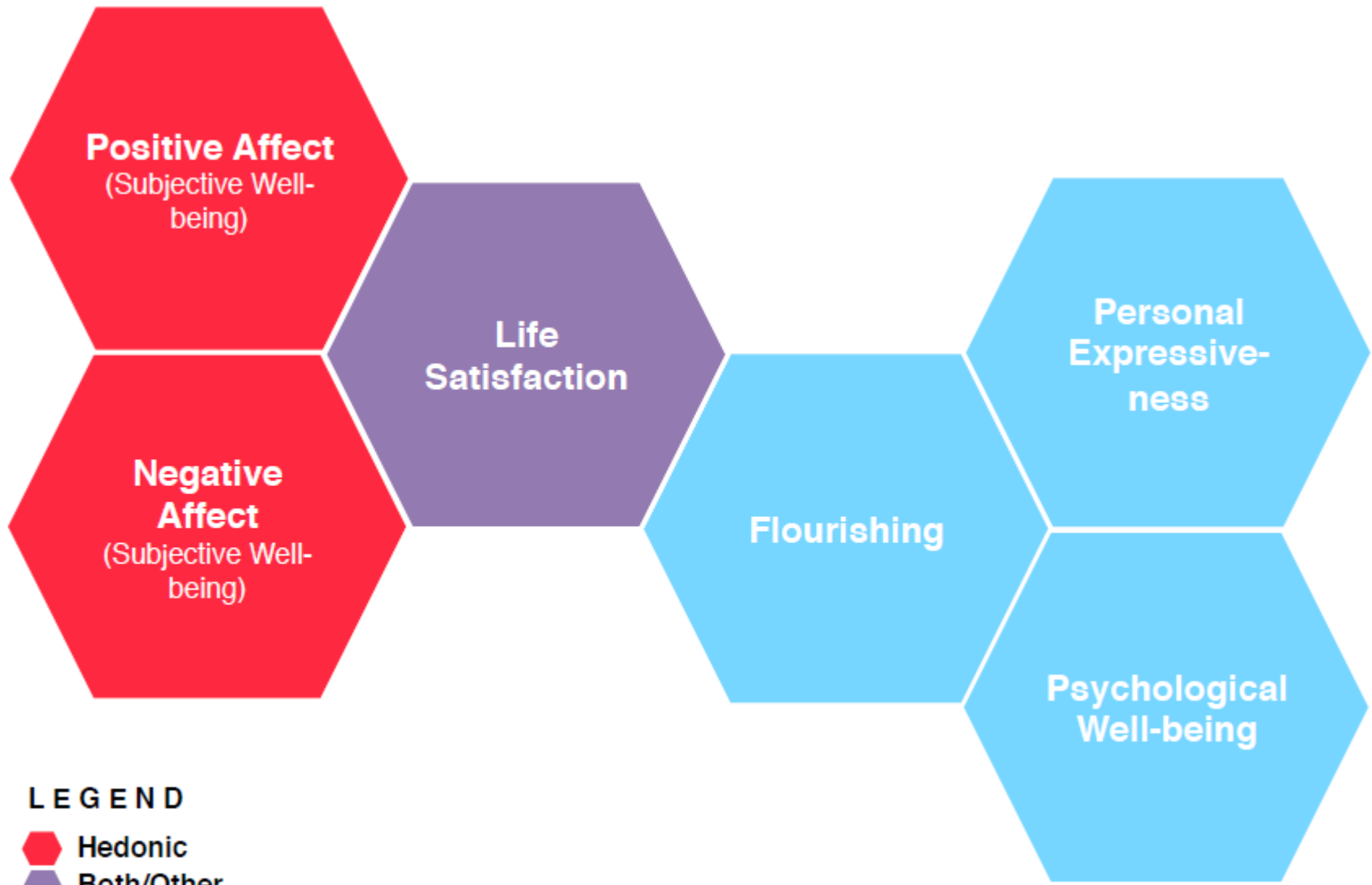
**Systems designed to help people pursue the “good life” should consider states of eudaimonic flourishing as well as hedonic pleasure along with traditional ergonomic design goals.**

**This is illustrated with a design challenge of a personal health record (PHR) bridge for a person living with chronic pain.**




**A PHR domain for registering a personal record of eudaimonic flourishment and engaged resilience (a PREFER domain) is specified for driving a virtuous cycle of flourishing.**







**LEGEND**

-  Hedonic
-  Both/Other
-  Eudaimonic

## **Consider Ms X**

**Ms X is a grandmother with a complex painful condition that developed suddenly as the result of viral infection. She is under the care of a pain centre located in a large tertiary care hospital.**

**Mostly the pain is uncomfortable but episodically it is debilitating.**

**How can a PHR assist Ms X in processing options in order to accomplish everyday goals**

## What is pain?

- There is an International definition of pain formulated by the IASP (International Association for the study of pain)
- Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage



*IASP— International Association for the Study of Pain 2011*

## Pain: Definition

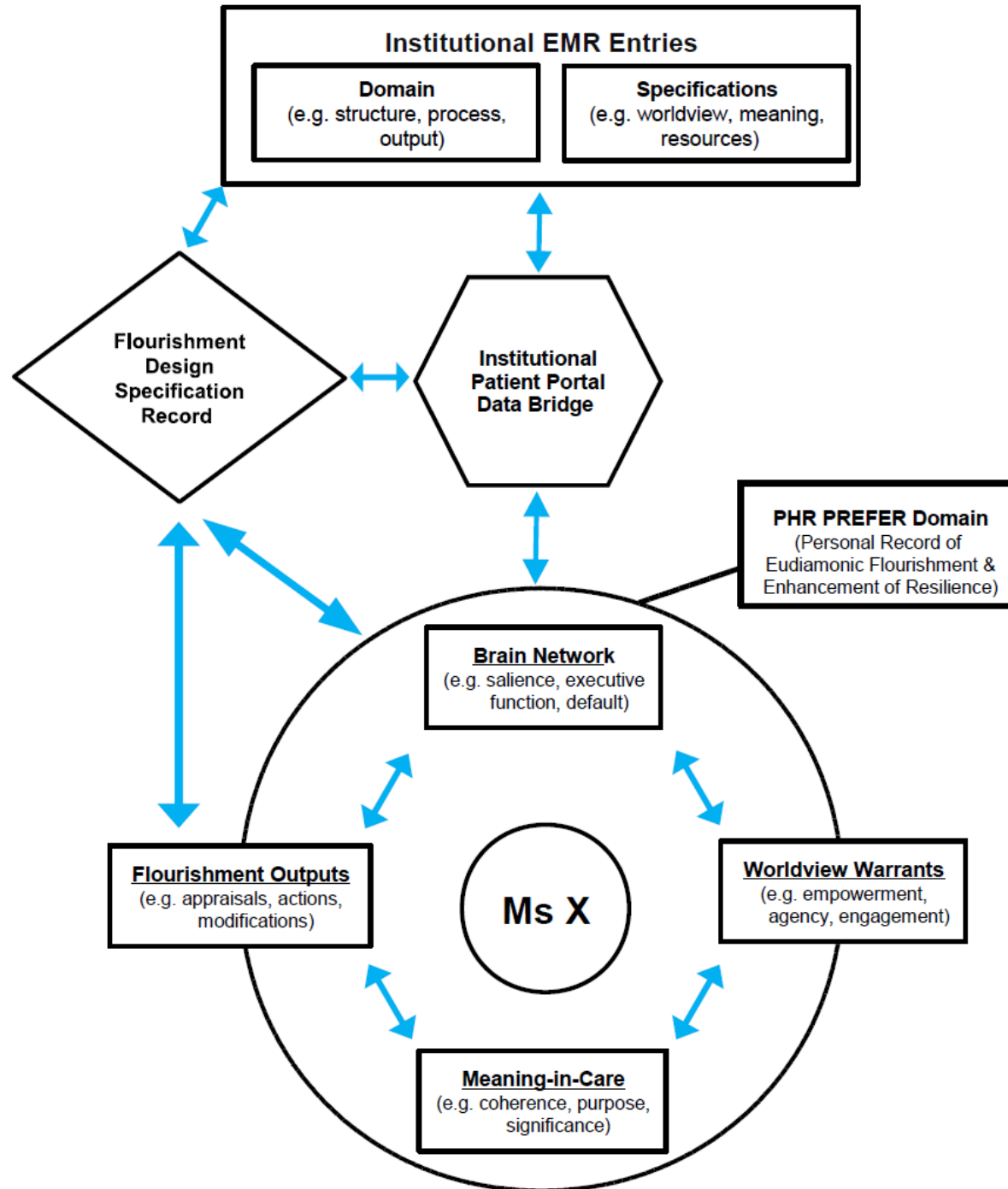
- ◆ **A complex experience** embracing *physical, mental, social, and behavioral* processes, compromising the quality of life of many individuals.
  - SSI Commission For Evaluation of Pain

**At a fundamental level, brain networks influence the cognitive work that the mind needs to invoke in order to process emotional, social and cognitive signals.**

**Medical therapy aimed at reducing the debilitating effects of experiences need to threat the whole brain and speak to each network**

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**Figure 1. A Schematic Representation of Relationships Between Record Systems that Can Interact with the PREFER Domain of Ms X's PHR.**



Ms X has been encouraged to participate in a mindfulness training program organized by the rehabilitation institute that the therapist is associated with.

The Institute maintains an electronic medical record (EMR) system with a patient-portal feature. That patient portal has been adapted to allow users to copy institutional EMR data about them to their own PHRs. This is accompanied by a locator for the data in the EMR system.

The PHR has a domain designed using eudaimonic flourishing principles that also create hyper data links to the official copies of the institutional EMR data entries.

A PREFER domain extension has been designed to assist institute clients like Ms X to reflect on the quality, purpose and impact of the services that they obtain through the institute.

### **Scenario 1**

At the structure level the Institute sponsors a number of mindfulness and acceptance training options each with a number of trainers. Ms X has to choose one

### **Scenario 2**

At the process level, the mindfulness training program will be supported by media that legitimize the professional and business transactions necessary to engage with that program.

### **Scenario 3**

At the output level, the Ms X needs to figure out how carry out her mindfulness exercises outside of the institutional training setting in settings where she lives.



**Table 2**

| <b>Scenario (Level)</b>       | <b>Media Priority</b>            | <b>Media Perspective</b> | <b>Brain Network</b> | <b>Worldview Warrant</b> | <b>Meaning -in-Care</b> | <b>Flourishment Output</b> |
|-------------------------------|----------------------------------|--------------------------|----------------------|--------------------------|-------------------------|----------------------------|
| <b>Scenario 1 (Structure)</b> | Integration-Driven Assessment    | Systemic-Scholarly       | Saliency             | Empowerment              | Coherence               | Salutogenic Appraisal      |
| <b>Scenario 2 (Process)</b>   | Legitimacy-Driven Implementation | Business-Professional    | Executive Control    | Agency                   | Purpose                 | Resilient Action           |
| <b>Scenario 3 (Output)</b>    | Insight-Driven Adaptation        | Societal-Cultural        | Default              | Engagement               | Significance            | User-Driven Modification   |

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