



A bionic enterprise is fundamentally about architecting every aspect of an organization to achieve that deep fusion of bionic technologies and human activity as the foundation for achieving bionic effects that lead to bionic performance.

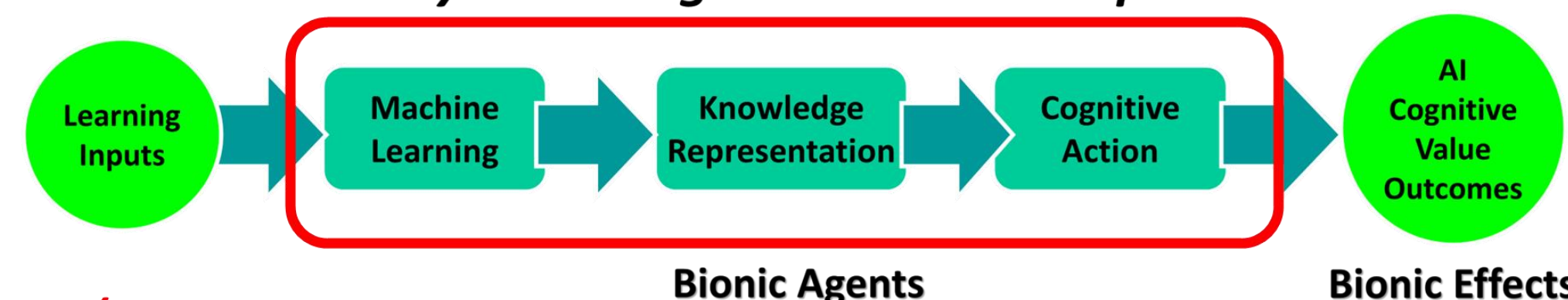
- Overview
- Human Perspective
- Technology Perspective
- Fusion: Transformation
- Fusion: Bionic Architecture
- Artificial Intelligence
- Fusion: Fusion Strands/UX
- Value Generation
- Fusion: Roadmap

## Fusion Strands, UX, AI Use Cases

### Bionic/AI Use Cases and Fusion Strand Design

- Analyze a User Experience (each action, each step, each interaction, each enterprise response)
- Determine how it can be improved (desired effect)
- Assess what Bionic Effects (cognitive actions, immersive interfaces, interface technologies) can achieve that desired effect
- Identify or build the types of agents that can provide that desired effect
- Leverage Cognitive Capital, Behavioral Capital, Network Capital
- Prototype – Test – Deploy – Scale Up into the Bionic Digital Platform

AI Value outcomes are expressed as Bionic Effects achieved by Bionic Agents in a User Experience.



AI/UX Use Case Design: Specific learning + Specific Knowledge + Specific Cognitive Actions = AI Use Case

The path to generating user value is for the enterprise to provide meaningful interactions between its human aspect and its technology aspect throughout the user journey.

## User Experience Technologies: Interfaces, Interactions, Intelligence Technologies

Select, design, or build Bionic Agents and AI functionality according to the dimensions of Bloom's Taxonomy to enable the achievement of Bionic Effects in User Experiences utilizing experience-appropriate Bionic Technologies.

Bionic Technology Areas	
Interface Technologies (Technology Capability Area 1: Interface)	
Technology Type	
Machine Vision (visual inputs, augmented and virtual reality)	
Object Recognition	
Scene Recognition	
Machine Hearing (syntactic recognition/processing, augmented and virtual reality)	
Machine Speech and Sound Synthesis	
Environmental Sensors and Internet of Things (sound, vibration, temperature, flow sensors, vision, speech, audio, sound, chemical, etc.)	
Robotic Machine Control, Actuators, Effectors and Telepresence (tactile interfaces, grippers, kinetic, non-kinetic energy interfaces, augmented and virtual reality, etc.)	
Machine Visual Output Generation and Display Technologies (reports, business graphics, analytics, forms-based I/O, advanced data visualization and display technologies - holograms, heads-up display, display monitors, etc.)	
Neural Interfaces (brain, nervous system interfaces)	

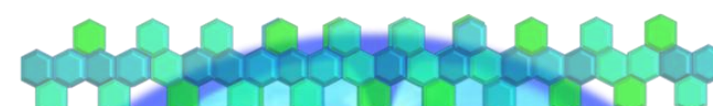
Bionic Technology Areas	
Interaction and Interpretation Technologies (Technology Capability Area 1: Interface)	
Technology Type	
Visual Cognition	
Image Analytics	
Scene Analysis and Interpretation	
Gesture and Movement Analysis and Interpretation	
Language Cognition	
Voice Tone Interpretation	
Language Translation	
Natural Language Understanding and Syntactic Analysis	
Natural Language Generation	
Speech to Text Translation	
Augmented Reality	
Virtual Reality	
Collaboration, Conversational Systems and Strategies (Conversational Context and Thread Management)	
Motivational Assessment (intention, motive, emotions, feelings)	
Social Interaction	

Technology Areas	
Intelligence (Cognitive, Computational Technologies) (Technology Capability Area 2: Intelligence)	
Technology Type	
Machine Learning	
Semantic and Contextual Understanding, Contextual Computing (continuous context management)	
Ontological Deduction/Induction	
Deep Learning	
Reinforcement Learning	
Autonomous Ontology Generation for Knowledge Representation	
Common Sense Reasoning	
Probabilistic Learning and Predictive Analytics	
Autonomous Learning (inspiration)	
Self-Referential Machines (self-aware, simulated consciousness)	
Search and Discovery Mechanisms	
Knowledge Management	
Domain Ontology Management Systems	
Database Management	
Knowledge Integration	
Knowledge Synchronization	
Data and Knowledge Interoperability	
Data and Information Standards	
Rule-Based Management Systems	
Transaction Management and Optimization	
Data Replication and Caching Technologies and Strategies	
Content Management and Delivery	
Autonomous Vehicle Navigation (ground vehicles, aircraft, ships, spacecraft, drones)	
Brain Integration (Cortex Agents)	
Simulation (simulation methods, virtual and augmented reality)	
Computational Engines (evolutionary computing)	
Process Management (activity assessment, design and automation)	
Process Re-Engineering and Automation	
Innovation Engines and Strategies	
Concept Synthesis and Design	
Recommendation Systems	
Content Creation/Generation	
Diagnostic Systems	

A Bionic Enterprise is built on a Bionic Digital Platform Supports the Bionic Enterprise Brain Constructed of Bionic Agents

### Bionic Enterprise Brain and its collections of agents.

#### Fusion Strands



#### Interface Agents

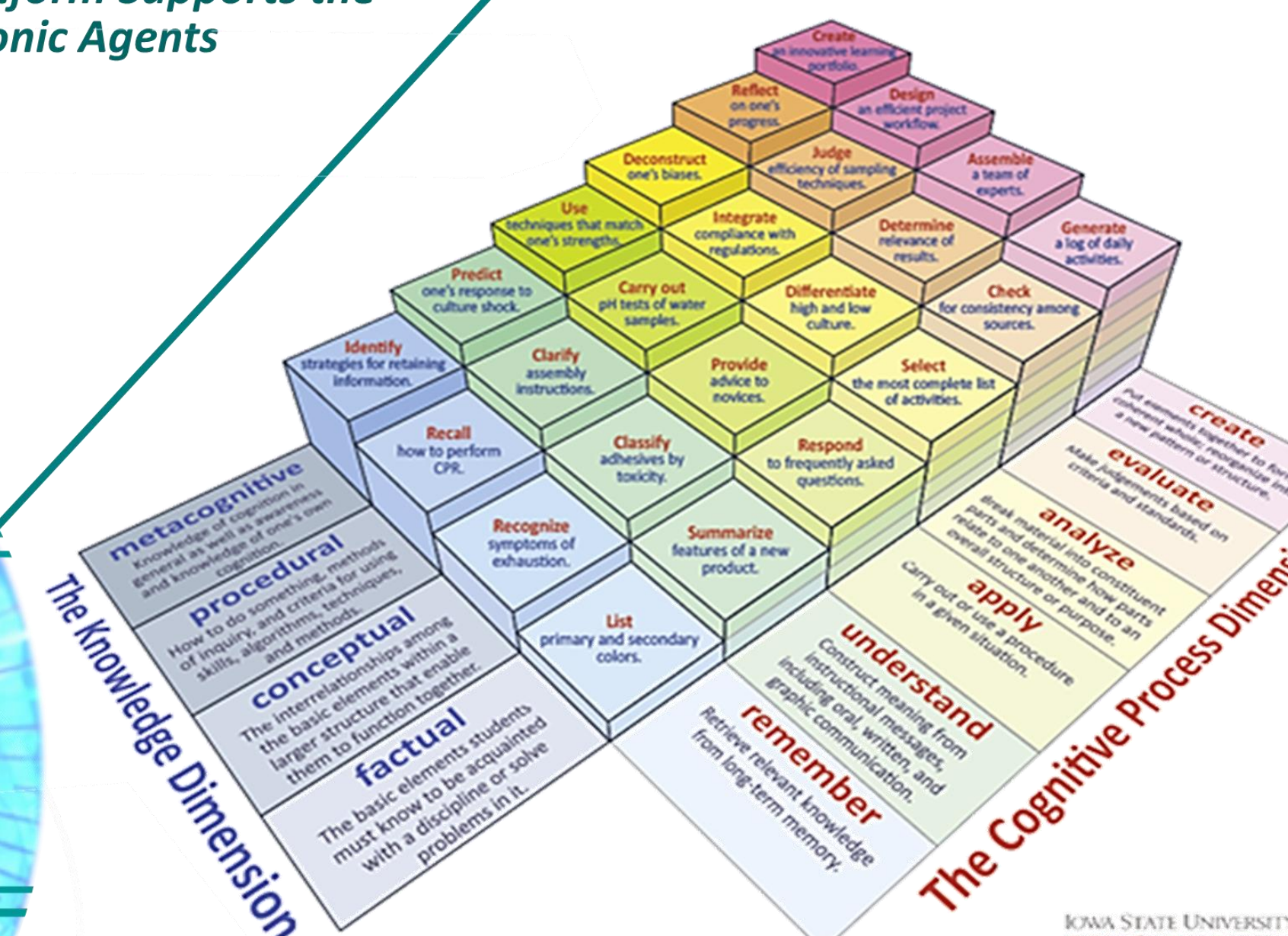
#### Connectivity Agents

#### Infrastructure Agents

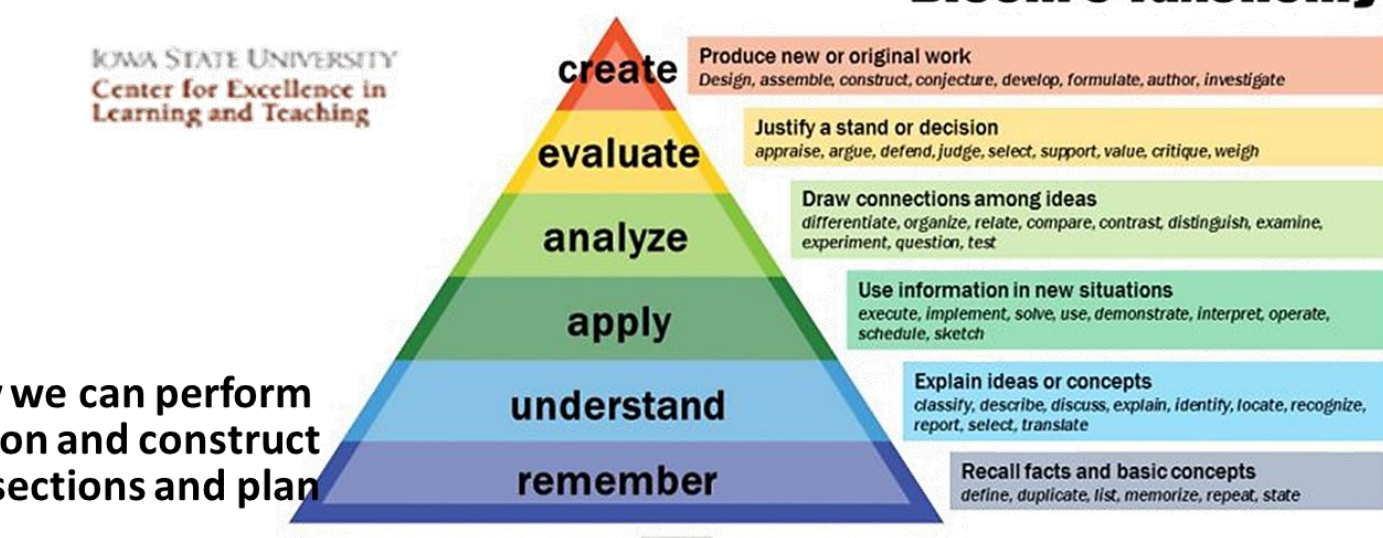
#### Interaction Agents

#### Cortex Agents

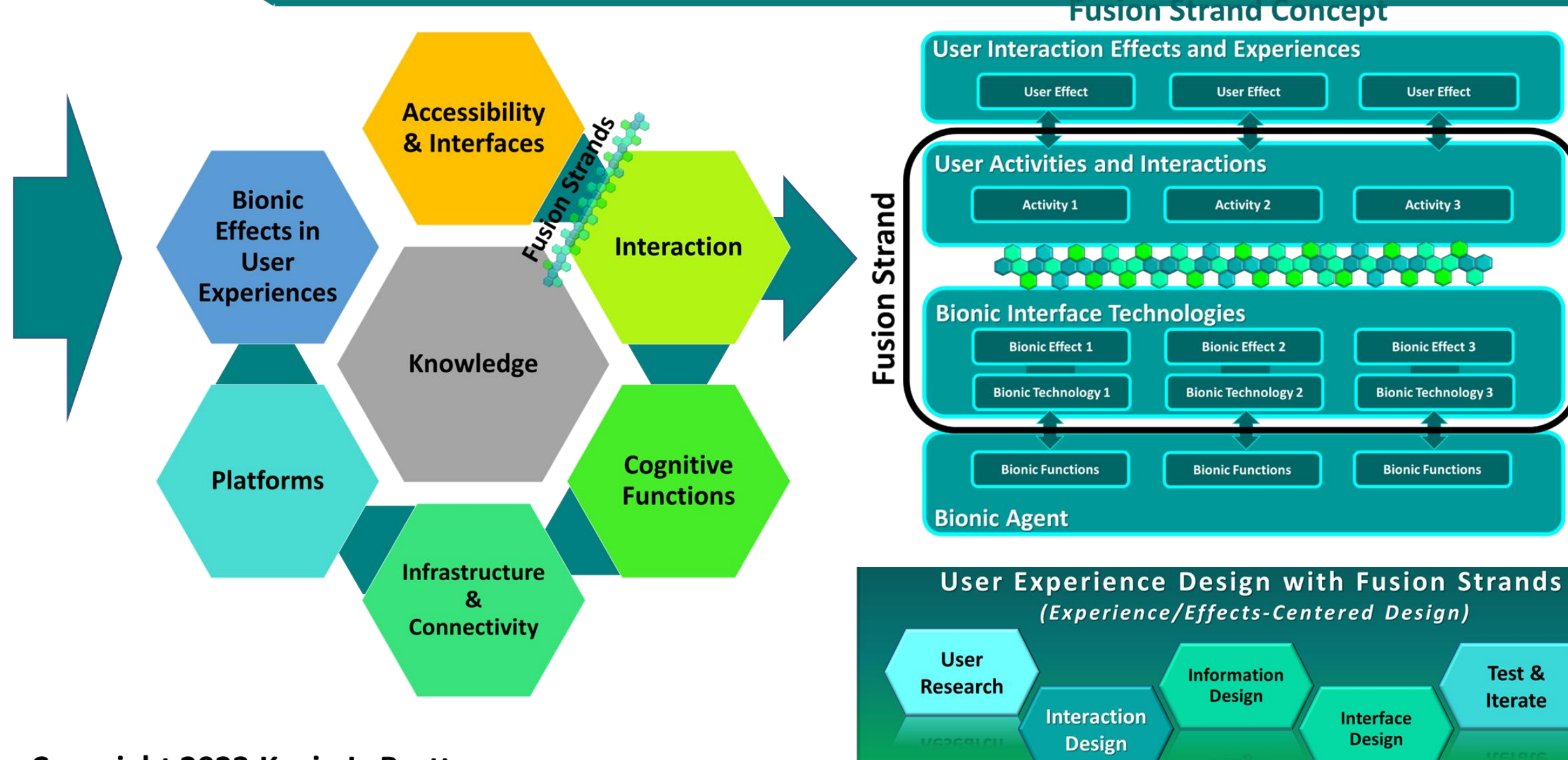
## The Intersection of Knowledge and Cognitive Action



- Bloom's Taxonomy is the most recognized and widely used learning taxonomy to design learning objectives for students.
- The Bionic Enterprise Brain should be designed and built to mature its ability to access and represent knowledge (Knowledge Dimension) and its ability to act on that knowledge (Cognitive Dimension).
- Each set of knowledge and each cognitive function derived from the taxonomy can be used to develop specific AI use cases and technology applications to improve user experiences, interactions, and value outcomes with the Bionic Enterprise.



For every task or interaction in a user journey we can perform this deeper kind of bionic digital transformation and construct bionic DNA fusion strands to map these intersections and plan the desired experiences in a systematic way.



- Bionic UX Effects
- Mentoring
- Collaboration
- Empathizing
- Partial Task Automation
- Task Acceleration
- Immersion (UX/VR/AR)
- Task Augmentation
- Task Elasticity & Scalability
- Task Autonomy
- Task Precision
- Task Accuracy
- Decision Support

- UX Qualities
- Defined Personas
- Discoverable
- Accessible
- Usefulness
- Usable
- Credibility
- User Enablement
- Duration
- Intensity
- Scope
- Interaction Modes
- Interface Modalities