# The BIONIC Enterprise

*Architected for Continuous Transformation*

**Envision | Transform | Thrive**

**Gartner study**
(October 2019) identified the top twenty digital experience trends for 2020 which included **Multi-Experience** - the incorporation of multiple modalities and fit-for-purpose interfaces appropriate to the experience) and **Agent Interfaces** that incorporate AI. Gartner describes agent interfaces as *"Agent interfaces represent a whole new paradigm of human-computer interaction and have broad implications that will greatly influence how enterprises interact with customers, offer services and provide tools to employees."*

## Bionic Fusion Strand Design: Bionic Transformation at the deepest User Experience Levels

# Bionic UX Design with Fusion Strands

***For every task or interaction in a user journey we can perform a 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 across value streams, mission threads, and user journeys.***

**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

## Bionic Fusion Strand Design Approach

The complete fusion strand design begins with the immediate user interface experience and its associated Bionic Effects. This experience is supported and enabled by Bionic Technologies and Bionic System Functions from each of the five Bionic Capability Areas. Moving down the Bionic Technology Stack we must identify the Bionic Effects, Technologies, and system functions in each of the capability areas that will be required to build the fusion strand. Once these have been identified, then determine if any of these elements already exist or can be repurposed or adapted from the current Bionic Digital Platform of the enterprise.

## Bionic Fusion Strand Logical Design Elements

**Value Stream / Mission Thread**

**User Journey(s)**

**User Experience** (current impression/feeling/experience) | **User Experience** | **User Experience**

**User Persona Model**

- **User Motivation** - specific motivation or driver for why the user wants to engage in a UX interaction
- **User Objective** - specific user experience objective of the user
- **User Expectation** - specific outcome, effect, result the user is seeking/desiring
- **User Task/Step/Action** - specific action a user is attempting to accomplish

**Bionic Fusion Strand Specification**
***Full Technology Stack***

| | |
|---|---|
| **Bionic Effect Type** *(Bionic UX Effects)* | **Capability Area 1: Interface** - specific bionic effect(s) to achieve with the UX: partial task automation, accuracy, immersion, acceleration, etc. |
| **User Interface Modality** *(Bionic Technology Taxonomy: Interface Technologies) (Bionic System Functions Taxonomy: Interface Functions)* | **Capability Area 1: Interface** - specific type of interface modality(s) that will enable the desired bionic effect(s) |
| **Bionic Interaction Technology Area** *(Bionic Technology Taxonomy: Interaction Technologies) (Bionic System Functions Taxonomy: Interaction Functions)* | **Capability Area 1: Interface** - specific interaction(s) through the chosen modality that will enable the bionic effect(s) |
| **Bionic Intelligence Technology Area** *(Bionic Technology Taxonomy: Intelligence/Cognition Technologies) (Bionic System Functions Taxonomy: Intelligence Functions)* | **Capability Area 2: Intelligence (Cognition)** - specific cognitive/machine intelligence capabilities that will enable the interactions that will achieve the bionic effects. |
| **Bionic Integration Technology Area** *(Bionic Technology Taxonomy: Integration Technologies) (Bionic System Functions Taxonomy: Integration Functions)* | **Capability Area 3: Integration** - specific integration capabilities that will enable the upper layers of the fusion strand |
| **Bionic Infrastructure Technology Area** *(Bionic Technology Taxonomy: Infrastructure) (Bionic System Function Taxonomy: Infrastructure)* | **Capability Area 4: Infrastructure** - specific infrastructure capabilities, technologies, functions that will enable the upper layers of the fusion strand |
| **Bionic Transformation Technology Area** *(Bionic Technology Taxonomy: Transformation) (Bionic System Function Taxonomy: Transformation)* | **Capability Area 5: Transformation** - specific transformation capabilities, technologies, functions that will enable the upper layers of the fusion strand |

**Behavior capital** – provides useful insights about how to structure the **fusion strands** through understanding of user behaviors, patterns, user personas, digital twins, motivations, and preferences.

**Fusion Strand Expression Form**

*agent-type* **ACHIEVES** *bionic-function-effect(s)* **THROUGH** [*bionic-function(s)* **DERIVED-FROM** *bionic-technology* **IN-ROLE-OF** [*bionic-function-role*]] **IN** *use-case-name* **FUSED-TO** *individual-activity* **PART-OF** *user-task* **WITH-INTERFACE** *bionic-interface* **OCCURING-IN** *user environment* **ENABLING INPUTs-OF** *input types* **PRODUCING OUTPUTS-OF** *output types,* **RESULTING-IN TRANSFORMED ASPECT OF USER EXPERIENCE** *part of user interaction transformed* **BY ENABLING** *interaction goal achieved.*

*Italicized-Phase* = variable (the name of the entity shown)
**BOLD-PHRASE** = expression primitives
[<sub-expression>] = a repeating element that can repeat as often as necessary

- *Where possible build new fusion strands from existing Bionic Digital Platform Capabilities*
- *If new fusion strands require the introduction of new functions and technology, then incorporate completed fusion strands into the bionic digital platform.*

***Bionic Technology Types***

**Bionic Agent & AI Technology Catalog**
(Bionic Technology Taxonomy – 5 Technology Areas)

**Bionic Digital Platform**
(Bionic System Functions – 5 Function Areas)

***Supporting System Functions***

*What does the current Bionic Digital Platform provide that could support the new fusion strand?*

### *Beyond Process Automation*

***We must think beyond merely automating processes and determine how to transform human activity and human experiences at the atomic level of interaction and the effects to be achieved at each step. Process automation is a buzzword that fails to speak to the possibilities of architecting value through a Bionic Digital Platform of Bionic Agents that compose a Bionic Enterprise.***

**Fusion Strand Interaction Design Considerations**

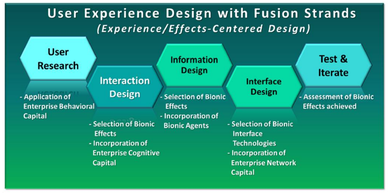
- What tasks must the user accomplish?
- What is the sequence of activities for the user during the interaction?
- What is the desired effect(s) of the interaction?
- What Bionic Interfaces or internal Bionic Functions in the technology stack of the enterprise can provide or support the achievement of that effect?
- What interface modalities are appropriate for the interaction and the environment in which the interaction will take place?
- What Bionic Interfaces will support or provide the types of interactions and support or provide the types of effects needed for the user?
- If different interfaces and modalities are used during an interaction, how does the workflow depict the user transitioning from one modality or interface technology to the next during the flow of interaction?
- If the technologies, functions, and effects that are needed do not exist within the Bionic Enterprise, which ones could be enhanced, matured, augmented, purchased?
- Which technologies, functions, and effects would require research and development?

**Bionic User Interaction Design with Fusion Strands**

1. Identify Enterprise Goals to be accomplished
2. Develop the User Experience Journey/Roadmap with mappings to those goals
3. Identify all required interaction points in the journey
4. Identify user actions
5. Identify agent roles required
6. Identify agent actions
7. Identify bionic effects to be achieved with each interface and associated agents
8. Identify interface modalities for each interaction
9. Identify specific interface technologies for each interaction
10. Develop information requirements for each interaction
11. Identify other agents within the technology stack that will support the user journey

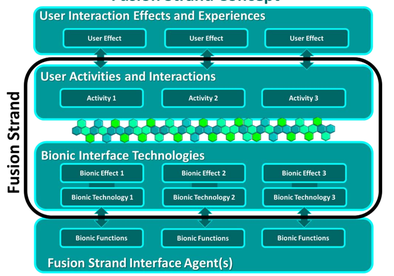
The BIONIC Enterprise

**User Experience Design with Fusion Strands**
*(Experience/Effects-Centered Design)*




*A fusion strand is the application of bionic technologies with specific user interfaces for the purpose of achieving specific bionic effects on user activities during a user interaction. The goal of the developing the fusion strand is to improve aspects of the user experience. These bionic effects are brought about by the application of **network capital** (where, how, when to interface with the enterprise), **cognitive capital** (what the enterprise knows how to do), and **behavioral capital** (what the enterprise understands about customers or users, partners, suppliers).*

**Fusion Strand Concept**




**Bionic Manifesto**

- Ubiquitous
- Hyper-Aware
- Hyper-Connected
- Hyper-Intelligent
- Curious
- Empathetic
- Self-Optimizing
- Hyper-Adaptive
- Evolutionary
- Self-Motivated
- Hyper-Converged

***Every technology has its place within the enterprise and every technology will fit somewhere in the overall framework of the enterprise architecture so that it can be understood for the role it plays and the level of maturity that it represents at a given time.***



- **Network Capital** – *accessing and experiencing the enterprise*
- **Behavioral Capital** – *building the enterprise to support user-centric activity and experiences*
- **Cognitive Capital** – *applying the knowledge of the enterprise to build improved user experiences and bionic level enterprise performance*