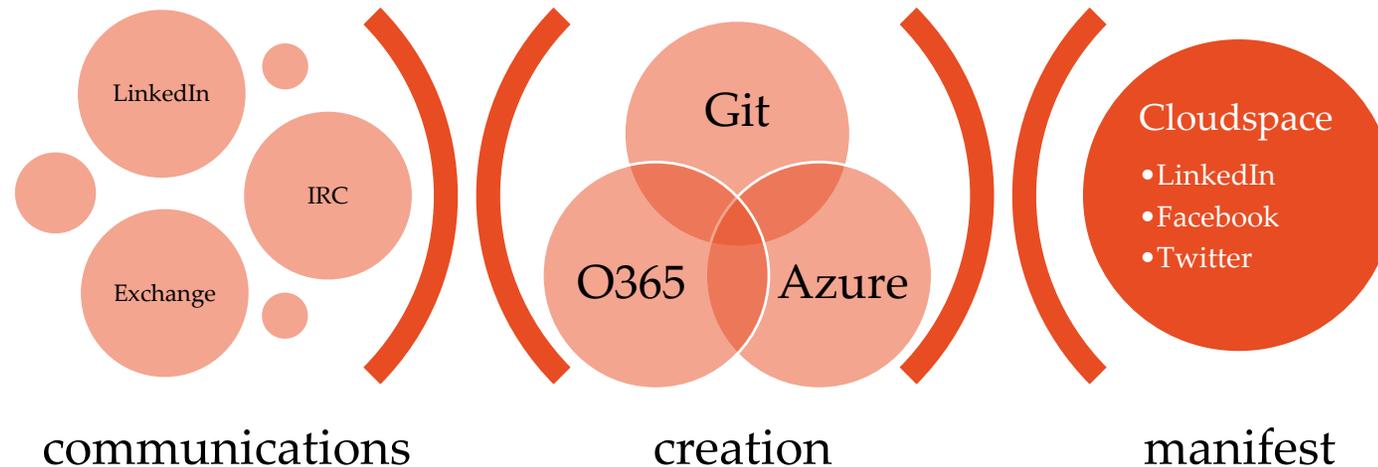

HTTP://DEVELOPMENT.EXCHANGE

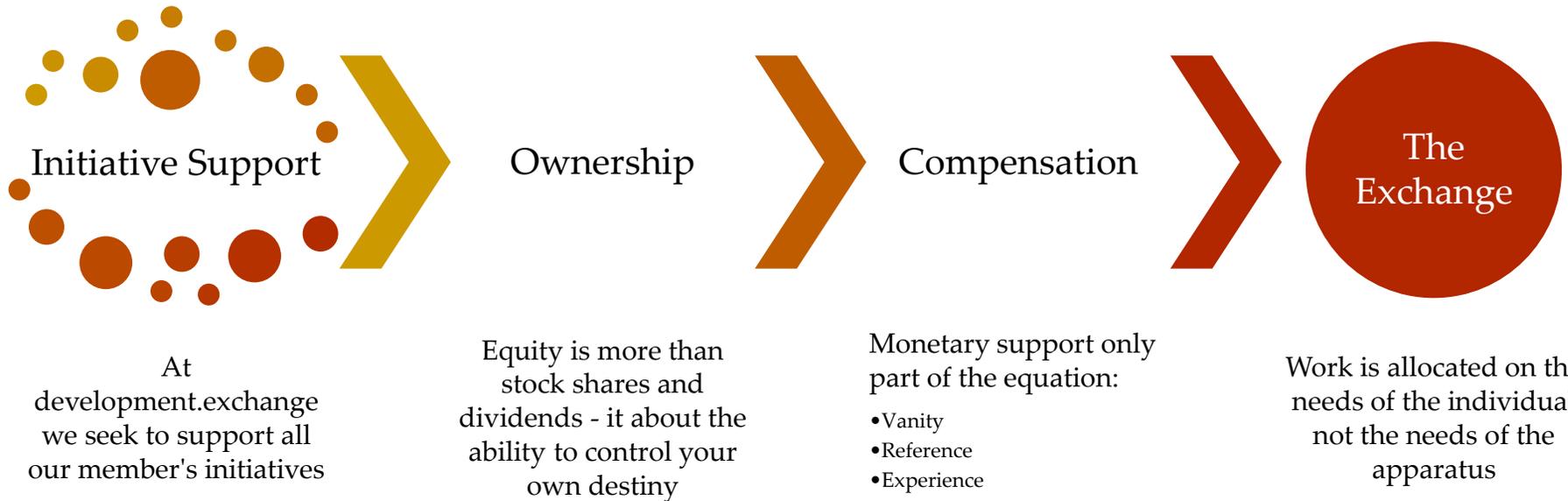
The Dev 3.0 Community
Jason L. Lind, USAF (Sep.)
19 Oct 2020

ABSTRACT

More than just software, development 3.0 is at its core about manifesting ideas into reality by the creation, and sharing, of toolkits. Open Source is only part of the solution - and at development.exchange we encourage the use of “copyfree” licensing, that is source code that is modifiable and exchangeable without attribution or republish, i.e.: the least restrictive possible – we must develop compensation mechanisms that go beyond exchange medium. The dev.ex paradigm is to manifest creation through communications.



Our goal is to build a system such that every individual involved wants to be dedicated to their work while simultaneously providing the compensation and support structure for everyone’s initiative. While compensation is obviously a key reason for employment, those at the pinnacle of their careers have higher priorities in choosing their professional field. There are many in the development fields, and we think very generally and abstract here, that are well compensated yet dissatisfied with their life in general – we contend this is because project space is not shared across organization space and therefore human resources have limited ability to define and choose projects.



In today's environment work assignment is a unilateral contract where the employer takes ownership of an individual's ability to make decisions. While this is ostensibly effective from a top down, chain of command, management perspective, we contend it is not only wrong and unfair but undermines the effectiveness of the organization. (Lind Innovation Mission Statement, Lind 2008)

Large modern organizations almost certainly have a number of subjects who are unhappy with their position within the organization and the organization in general. Make no mistake about it, when a person joins an organization become a subject of that organization – regardless of the type of that organization.

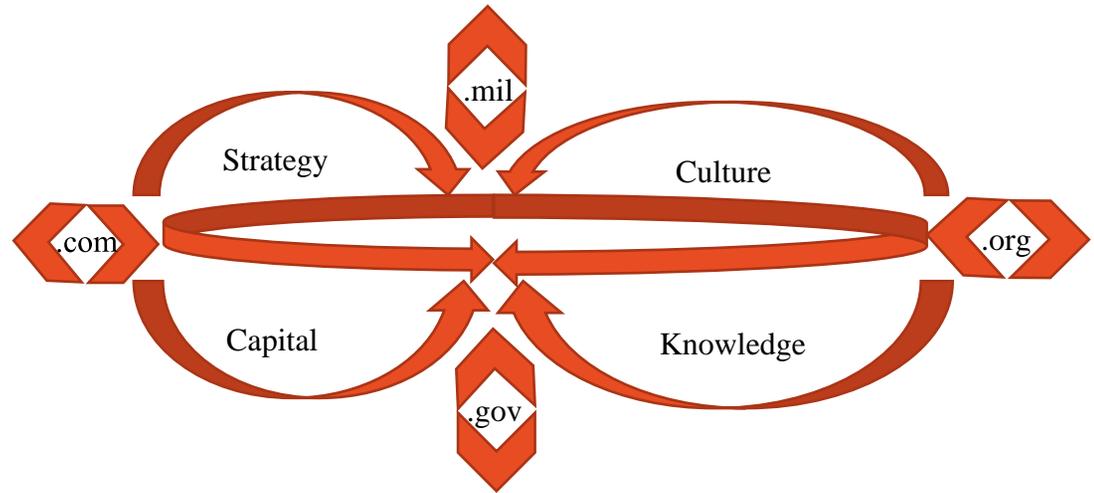
Organizations exist to accomplish goals and more often than not the statement of those goals are ambiguous to the extent that many subjects are unable to understand them. Often the processes to implement the goals of an organization are so complex that it is impossible to expect all those involved to understand the motivation and intent behind those processes. Processes are defined and implemented by all subjects of the organization, both formal and informal, and those processes are constantly in flux.

Since it is impossible for any one group of people to understand the implementation of an organization, hierarchical command and control may be effective from setting high level goals but it cannot be effective in the implementation of those goals. An underlying assertion in the chain of command solution is that every goal requires a single solution – when in reality it is often impractical to determine the correct solution until competing solutions are in place.

Development.exchange delivers this functionality to organizations large and small.

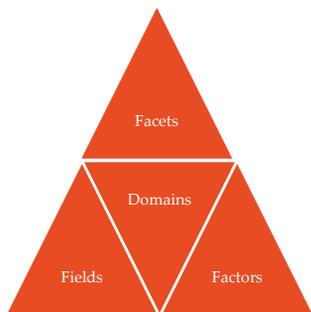
ALL-DOMAIN TRANSFORMATION (ADT)

At development.exchange we recognize that Strategy, Culture, Capital and Knowledge exist on a continuum: that is it is impossible to affect one facet without the others. This is a fact many modern organizations fail to account for, let alone leverage. The diagram to the right expresses the Transformative Continuum which dev.ex leverages: specifically that Global Level Domains Create, Communicate and Manifest into the 4 facets.



It is important note these domains are not traditional ICANN tld's: development.exchange sits in .int having participating organizations federating with each other in an ad hoc network – each representing any number of geo's including .us, .uk, .jp or even .cn as in order to onboard some of our allies we cannot outright reject any actor and the platform. Ostensibly this may seem to have obvious OPSEC and INFOSEC implications: however this platform is architected around a distributed ZeroTrust model – in that development.exchange is actually a collection of components wholly deployed and managed by the implementer; we are simply orchestrating the standardization of API's and languages to encourage a “common dialect” at scale.

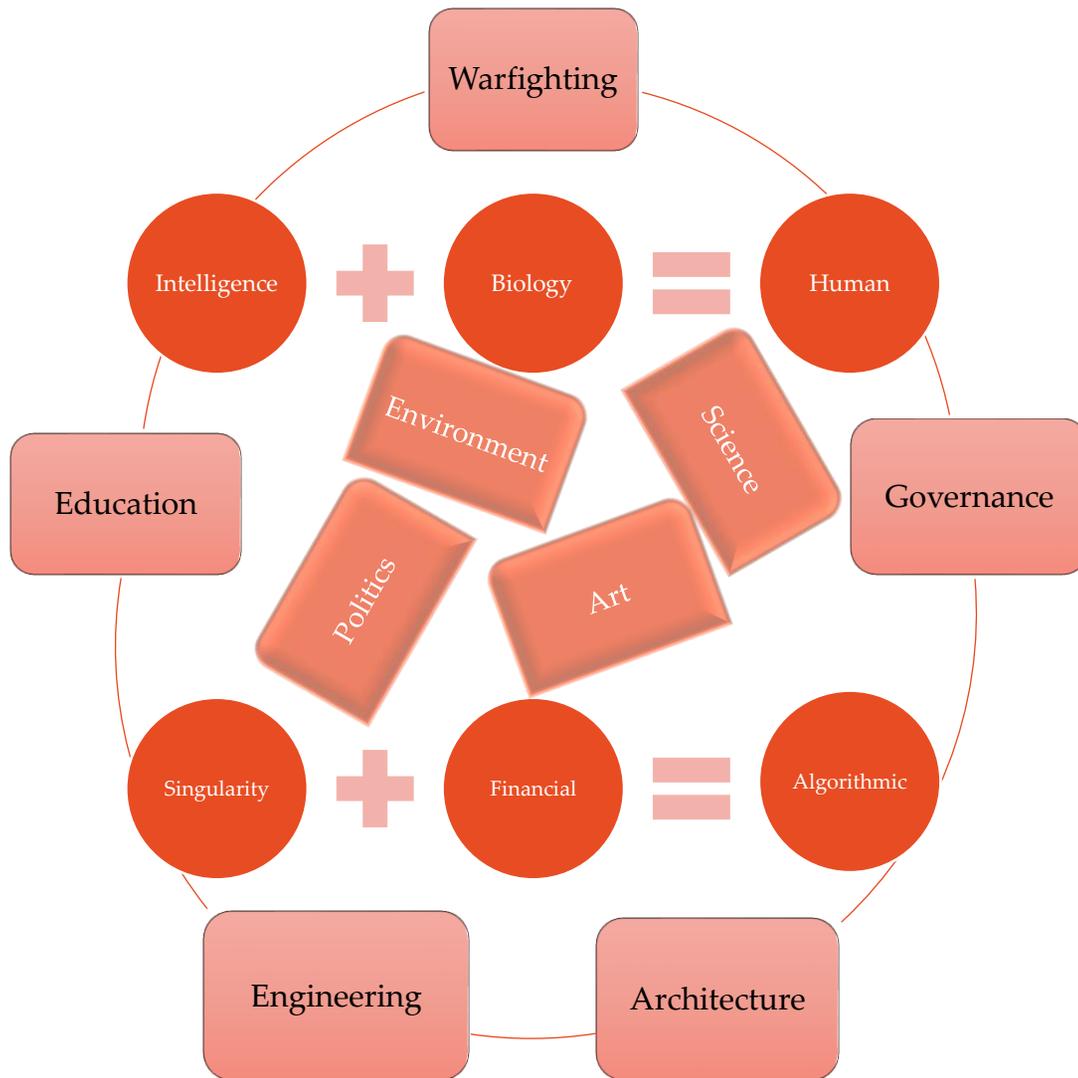
At an even more abstract level: domains interact with reality through Facets – which in turn are built through Fields that are bounded through Factors. Fields are logical constructs for interaction and there is an implication that each Facet and Domain operate in each of the five Fields: Warfighting, Education, Governance, Architecture and Engineering.



Factors can loosely be defined as: component of thought that interact on the continuum with Human and Algorithmic being undisputed and others being more fluid between implementers.

Different organizations have different perceptions of their “Federating OPSEC Requirements”, but even more so there are natural order implications of applying warped interpretations of OPSEC for when Strategy and Culture are shared trust is built, development.exchange's ambitions reach far beyond implementation of projects but rather implementation of policy in a world without borders. Proper OPSEC does not entail hiding implementation details but rather developing an operation that is secure from failure – and providing mechanisms to research and

develop enhanced OPSEC is in itself a project that would be ideal for execution on The Exchange.



FIELDS AND FACTORS

WARFIGHTING

“An active struggle between competing entities”: Sun Tzu’s thousands of years old treatise: “The Art of War” has been used by business and political leaders for generations to frame decisions that go well beyond armed conflict. This part of the field is responsible for interacting with competition organizations.

EDUCATION

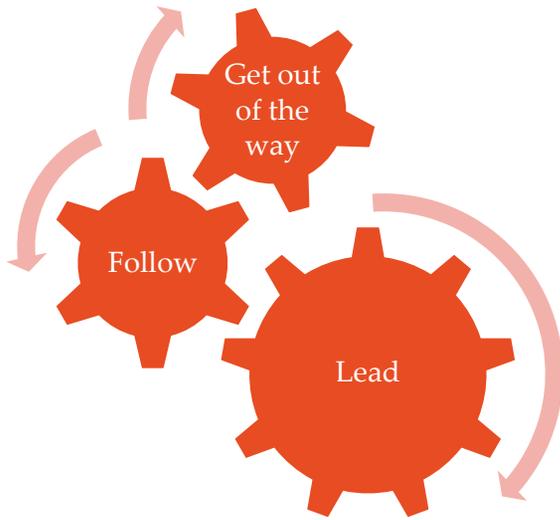
While the other four fields could be describes as “Operations Focused”, according to ATR Operations – while existing in a complex relationship with Operations, is indeed on the opposite side of the spectrum. If we had to pick one, and only one, field as the most important it’s a very easy case to make that organizations that deal with imparting knowledge and training on their subjects are going to be more successful than those who do not.

GOVERNANCE

“Direct or strongly influence the behavior of”: the Governance Field is responsible for setting high level policy and procedures for the entire organization.

ARCHITECTURE & ENGINEERING

Whereas Architecture is about design, Engineering is about application – however, like all 5 fields, it is impossible to separate one without the other.



In our view every successful actor, and hence organization, will find areas to not only take leadership roles but also have the wisdom to follow, or even get out of the way of, great leadership in the sense that reinventing the wheel is rarely a worthwhile endeavor. Collaboration is the lifeblood of any successful actor and as such we anticipate significant demand for the development.exchange platform. dev.ex at its heart is Cognitive Warfare (CQW) as a service: providing an avenue for players in all positions to affect reality through cyberspace.

“CQW, for our purposes, is simply next-order Cyberwarfare, or “beyond the bits and bytes”. Social Engineering would be another synonym. Classical Game Theory is ultimately about making decisions – given rules and utility curves (and their associated payoff functions) who does what? Social Engineering on the other hand could be described as an applied branch of Game Theory where the rules and utility curves are altered – either in reality or just in meta – to adjust opponents play in reality.” – A Cognitive Cyberwar (Lind, et al 2020)

CDDT LOOP – NEXT-ORDER OODA

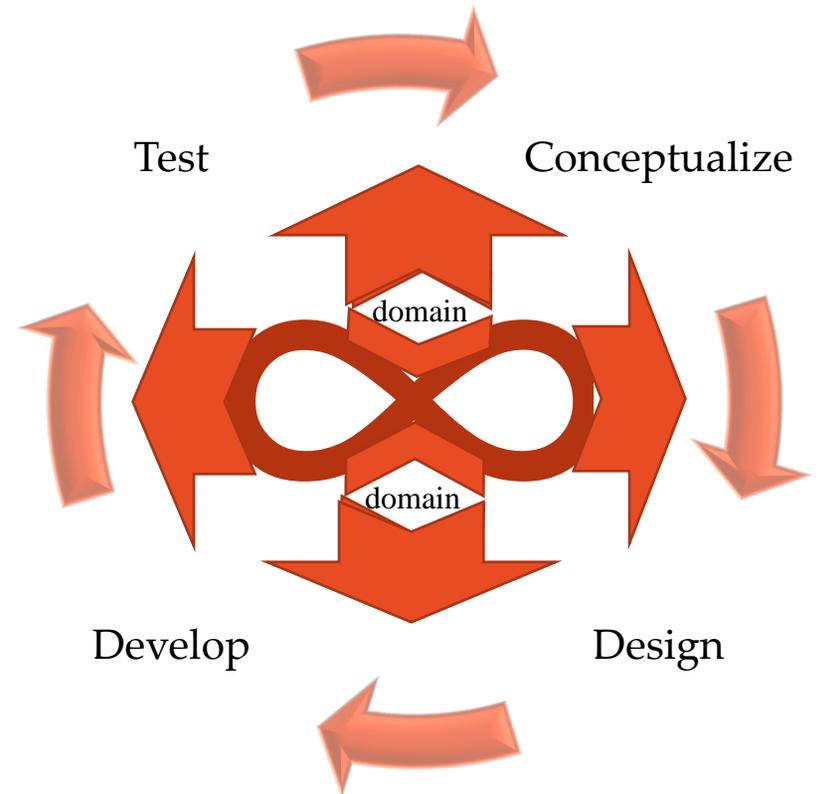
This loop is occurring above the “Transformative Continuum” and between various entities on domains – and should not be interpreted as single project or solution as these processes are very abstract. At its core development.exchange is seeking to structure and automate these processes at scale. OODA on the other hand happens by individual actors, and probably not even organizations.

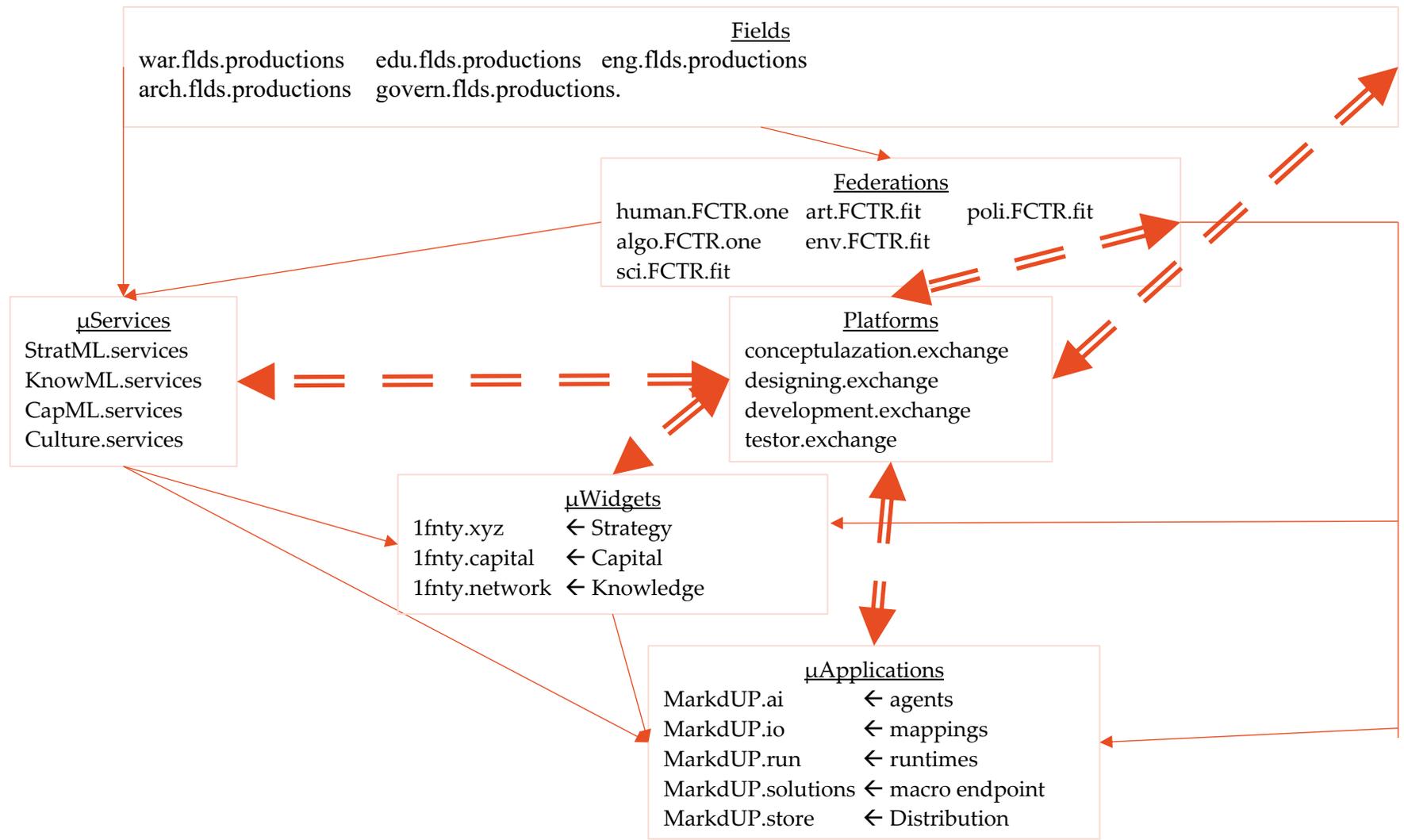
CONCEPTUALIZE: RESEARCH AND DREAM

DESIGN: FORMALIZE SOLUTIONS

DEVELOP: PRODUCE WORK PRODUCT

TEST: CHECK SOLUTION -> CONCEPTUALIZE IMPROVEMENTS





KING'S KNIGHT TO BISHOP'S 3 – THE Nf3.AGENCY

Constructed around the CDDT Loop, with a logical platform for each cycle, The Knight to f3 Agency seeks to transform Command, Coalition and Operations at a macro level via CQW. Agency property will be 100% “copyfree” while deployments – including data/code and binaries – will be under the absolute control of their owner. Our Strategy to realize a fundamental shift in Capital and Culture in the DoD Energy arena begins with high level engagement of global level domains starting with handing over Exchange Directory Services (XDS) authority to various global governmental and non-governmental entities. XDS – under design - is a decentralized and distributed protocol for defining bindings between microservices, applications and widgets used by external resources and the platforms to achieve elegant cross boundary transformations and federations.

$\{slice_b\}. \{tld?\}. \{cld?\}. \{gld\}. \{slice_a\}. ICANN / \{a \neq b\}$

The diagram shows a domain structure with several components. A red arrow points from the top left to the $\{slice_a\}$ component. Another red arrow points from the bottom left to the $ICANN$ component. A third red arrow points from the bottom left to the $\{a \neq b\}$ component.

Aggregates

Specifically we will be introducing an “Exchange Directory Services” (XDS) protocol that will offer a distributed and decentralized approach to account addressing and interaction across the *.exchange platform – as well as four languages, and services to syndicate them: StratML (already an ISO/ANSI standard) – for strategic modeling, CultureML – for describing cultural aspects such as formal and informal organizational structure, CapitalML – for describing human, technical and financial capital structures, and KnowML which will combine these three elements into knowledge.

XDS enabled domains are built on top of ICANN and the existing DNS infrastructure – it is a protocol, with a public reference architecture utilized by agency assets, that defines available operations in a next-order logical functional mapping over DNS Zones. In addition to mapping subdomain paths, it provides hints at the schema of blocks and their operations and implementing protocols. Think of it as a more abstract and syndicated version of Swagger.

The top-level-domain/country-level-domain/global-level-domain path is unique across ICANN level domains implementing that XDS tenant. The slices (a) that come before the path are owned by the ICANN domain and are a meta representation of services or applications whereas the back end of the domain path is owned by the top/country/global path are implementations of those meta constraints. At the meta level XDS can be configured to produce directory listings of tenants and applications.

All XDS enabled domains have a metaservice its root with implementations for each top-country-global pair combination, applications do not have their own XDS. In addition to Read, XDS exposes secure management API's for automated modification of the metadata.

$\{tld?\}. \{cld?\}. \{gld\}. xds. ICANN$

Our goal is to find a DoD sponsor (US CYBERCOM?) for *.us.mil.* that will take the responsibility of administering the authority of the US Military Namespace on the Nf3.agency Suite.