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## Chapter

# UnIX-CARE: Universal Interface & Experience Via Collaborative Archive Repository Express

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## Abstract

It is feasible to simplify interface design for better user experience without web developing skillfully. CARE or collaborative archive repository express holds the answer to universal interface & experience (UnIX) through algorithmic machine learning. CARE in collaboration with DATA and wiseCIO as a whole establishes a CMD triad for content management and delivery that harnesses rapid prototyping for user interface and propels user-centric experience by cohesive assembly of Anything as a Service (XaaS). Basically, user-centric experience makes a user centered without often webpage swapping while browsing in hierarchical depth via “In-&-Out” interactivity, and exploring in contextual breadth via self-paced spontaneity. Furthermore, CARE incorporates express tokens for information interchange (eToken) into the CMD triad to prepare integral content management and informative delivery. In particular, by exploiting eToken, CARE promotes seamless intercommunications in-between and empowers users to be UNIX professionals cohesively, such as *ubiquitous* manager on content management and delivery, *novel* designer on universal interface, *intelligent* expert for business intelligence, and *extraordinary* liaison with XaaS without explicitly coding. More CARE uses algorithmic machine learning to coordinate instant online publishing, assemble efficient presentations via wiseCIO to end-users, and aggregate diligent intelligence over DATA for business, education and entertainment (iBEE) through robotic process automation.

**Keywords:** collaborative archive repository express, universal interface & experience, algorithmic machine learning, express token for info-interchange

## 1. Introduction

UnIX-CARE or Universal Interface & Experience has emerged from Collaborative Archive Repository Express through algorithmic machine learning that is involved in more and more aspects of everyday life through cloud-based content management and delivery (CMD) [1]. wiseCIO denotes web-based intelligent service engaging with cloud intelligence outlets [2], and DATA represents digital archiving via transformed analytics [3]. CARE is conceptualized as a “fastlane” that provides mathematical and

computational solutions to distributed and cloud-based problems to bridge the gap between integral content management over DATA and informative delivery on wiseCIO.

CARE is central to collaborating DATA with wiseCIO into a triad that best serves cloud-based content management and delivery (CMD) for UnIX that makes a user centered without often webpage swapping while browsing via wiseCIO and exploring over DATA via algorithmic machine learning that enables users to browse information in depth with hierarchically “in-&-out” interactivity, and to explore intelligence in breadth with contextually self-paced spontaneity to aggregate intelligence for business, education and entertainment (iBEE) in support of decision-making [2–4].

### **1.1 Collaborative triad for content management & delivery**

Collaborative triad is a model created to guide policies for information comprehension among and direct fulfillment of multiple cloud-based components that refer to *digital archiving* for content management over DATA, *intelligent service* for informative delivery via wiseCIO to support enterprise decision-making, and *archival repository* express for instant publication via UnIX-CARE. The model is also somewhat helpful in resolving controversial agendas among web personnel [5]. In general, cloud-based distributed intelligent services are currently presented via a website, or enterprise websites that are quite subject to the management and influence of personnel, such as a webmaster, web designers, service maintainers and end-users. Taking a large collaborative enterprise IT team as an example, “controversial web personnel” often have objectives for the websites that fail to consider the services being offered and could lead to controversial agendas: the webmaster oversees and ensures that the technical aspects of a website are met; the web designer is usually responsible for the site’s creative aspects; and the end-user is pleasant to discover useful and usable information for enterprise decision-making.

As a collaborative effort made to turn *controversial* agendas into *cohesive* advancement to propel large teams united and working together effectively, Collaborative Archive Repository Express (CARE) incorporates DATA and wiseCIO into a CMD triad via universal interface with better user experience (UnIX) for content management and delivery. As a borrowing term for the sake of emphasis on critical briefness, “DNA-like” ingredients are introduced for transmissible UnIX to promote collaboration among three parties of the CMD triad. “DNA” stands for deoxyribonucleic acid that contains units of biological building blocks as a vitally important molecule containing something that makes individuals unique [6]. In addition to UnIX that makes users centered while browsing web content and exploring information, the CMD triad provides novel solutions to controversial agendas via eToken-express tokens for information interchange in support of seamless intercommunications among three CMD parties and semantic enrichment from “DNA-like” ingredients to human-computer interfacing that is presentable and rederable through highly robotic process automation [7].

Algorithmically, intelligent services are developed with mathematical and practical methods for advanced solutions to integral content management over DATA and informative content delivery on wiseCIO. As a result, the CMD triad empowers end-users to be cohesively UNIX professionals, such as *ubiquitous* manager on content management and delivery, *novel* designer on universal interface, *intelligent* expert for business intelligence, and *extraordinary* liaison with Anything as a Service without

explicitly coding. In particular, DATA helps the end-user act like a webmaster to ensure that the technical aspects of web content management are met, CARE advances the end-user through web-based interface design without explicitly coding, and wiseCIO assists the end-user to be an intelligent expert to discover useful and usable information in support of decision-making.

## 1.2 Chance and challenge

By using “DNA-like” ingredients, both integral content under managed by DATA and informative delivery via wiseCIO are working cohesively without trivial information involved. It is the CMD triad through algorithmic machine learning [8, 9] that takes CARE in collaboration with DATA and wiseCIO to promote seamless intercommunications for interoperability via joint tasking of Anything as a Service among three parties of CMD triad. Express tokens for information interchange (eToken) have been introduced in “DNA-like” notations to express (*via fast transmission*) digital archiving for content management and fulfill (*via online analytics*) intelligent services through universal interface & experience (UnIX). In a sense, UnIX simplifies instant content publishing in such a means that anybody could only need to input “DNA-like” eToken in dictionary (Key-Value) pairs that are intelligently full of implicit syntactics and semantics in light of algorithmic machine learning; in a more significant sense, UnIX enables an ordinary user to be a webmaster, a web designer, and a database administrator with great ease. In light of “DNA-like” eToken, In human computer interfacing, “DNA-like” eToken’s ability to innovate provides a key abstraction for UnIX differing abstractly from traditional web development in HTML/CSS/JS and/or PHP/Python.

The publishing express in dictionary eToken pairs is capable of empowering universal interface & experience in the simplest means without explicit syntactics and semantics. This can shift the sophistication of interfacing design onto machine learning patterns without explicit coding required, but would result in highly brief description that is hard for a user to grasp, especially for a new-hand who might not be sure “what’s going on” until the visual interface enabling algorithmic interactivity applied via operations. One of a “fake drawbacks” would become true that similar dictionary eToken pairs may vary human computer interfacing when being associated with a variety of polymorphous and powerful patterns for machine learning. Web designers would have messed up web design with “wishy-sahy” agendas if they had lost understanding of original eToken in depth.

Elastically, instant typing online publishing (iTOP) in dictionary eToken pairs turns out immediately, the web designer can experience and enjoy visual renderability and actionable interactivity. Thanks to algorithmic machine learning, UnIX-CARE supports semantic enrichment transitioning “DNA-like” eToken into analytical, interactive and responsive (AIR) across three parties of the CMD triad through elastic process automation.

## 1.3 Major contribution

UnIX-CARE in collaboration with wiseCIO and DATA utilizes “DNA-like” eToken to achieve “cohesive UNIX” objectives as follows:

*Ubiquitous webmaster* across the CMD triad propels seamless intercommunication & interoperability among CMD parties to ensure technical aspects of web content management to be met (Section 2 ~ algorithmic CMD).

*Novel designer* utilizes eToken to perform informative delivery via universal interface design and automate user-centric experience without explicitly coding required (Section 3 ~ innovative CARE).

*Innovative expert* aims to discover useful information and analytically harness intelligence for business, education and entertainment for enterprise decision-making (Section 4 ~ analytical iBEE).

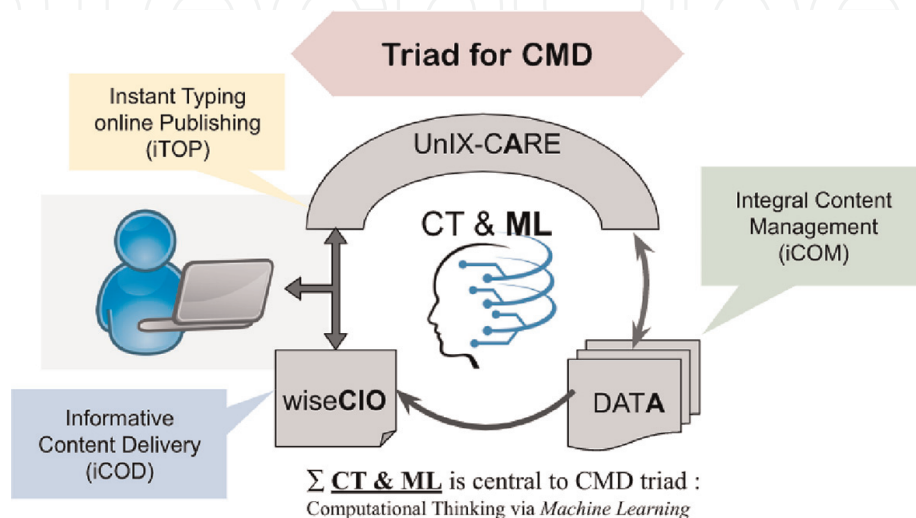
*Extraordinary liaison* with universal interface for rapid prototyping of user-centric experience and cohesive assembly from Anything orchestrated as a Service, which will be discussed (Section 5 ~ Qinary XaaS).

## 2. CMD triad via algorithmic interactivity

Algorithmic interactivity represents information and operating technologies [10] applied to the CMD triad that is comprehended as UNIX-based Anything as a Service involving three correlated aspects: Collaborative Archive Repository Express promotes instant publishing to incorporate with integral content under managed over DATA, and informative delivery via wiseCIO to best serve cohesive personnel, illustrated in **Figure 1**.

With CMD triad diagrammatically illustrated in **Figure 1**, CARE to innovate uses iTOP for UNIX-universal interface & experience to bridge in between, DATA is evolved to cumulate “DNA-like” ingredients via digital transformation for integral content management (iCOM) through operating technologies, and wiseCIO is created to liaise with universal interface for informative content delivery (iCOD) through information technologies.

What is central to the CMD triad is computational thinking and machine learning [11]. The former empowers managers, decision makers and administrators to think laterally to generate a broader range of solutions, and the latter operationally automates a process of applying problem-solving from UNIX-CARE, through DATA, to wiseCIO. This chapter adopts the term of DNA as “DNA-like” ingredients that contain units of building blocks in the CMD triad for essential, vital, and sufficient information utilized for machine learning automata.



**Figure 1.** UNIX-CARE collaborated with wiseCIO and DATA into CMD triad.



## 2.1 Integral content management via digital archives

Online analytics and procedural automation highly relies on integrity of content under management where archives are digitized to ensure content to be *formattable* for computational processing, *verifiable* for analytical processing, and *cohesive* for algorithmic machine learning without unnecessary redundancies. How to format information and/or digitize content denotes a means by which a chosen pattern is selected to arrange and store text on a computer. The digital pattern promotes integral content management through digital transformation to which algorithmic machine learning can be applied.

As well known, DOM (document object model) dominates traditional web documents in HTML/CSS/JSON, and some data retrieved in XML/JSON from a database that may have some digitized features for computing and processing. A traditional web document primarily serves the sole purpose on how to render content as a web page on the client device via retrieving and/or downloading. With DATA, “DNA-like” eToken is introduced to express digitally-archived content to serve one of multiple purposes: significant content of integrity ensured without being trivial information in HTML/CSS/JSON.

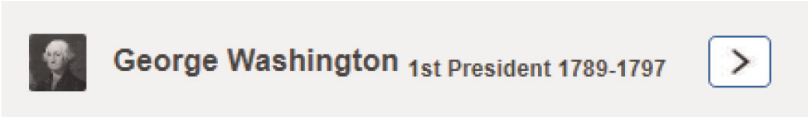
**Table 1** discloses what “DNA-like” notations look like in expressing a **profile folder** as a single folder for George Washington, the first President of the United States of America, and how profoundly they serve multiple purposes. The profile folder or folder, a digital archive that is “DNA-like”, intelligent and applicable via algorithmic interactivity, performs UnIX design with multimedia to play and virtual containers through fold-out / fold-up.

UnIX-CARE is embodied by digitally integral archives of excellent novelty, characterized as *actionability*, *interactivity* and *manipulability* (AIM) for bridging between DATA (management) and wiseCIO (delivery) via algorithmic interactivity. For instance, the little image button to the left of foldHead enables to play the folder-related multimedia, such as video, audio or other web service, and the arrow-button to the right fulfills fold-out (to open its body) and fold-up (to close).

As a result, all of the above mentioned activities will not cause webpage to swap but result in better user experience. Impressively, the “DNA-like” notation at least keeps integral content under management in utmost brief without redundancy, which will be in further discussions.

## 2.2 Algorithmic online analytics via machine learning

Online Analytical Processing or OLAP [12] is a core component of data warehousing implementations that enables fast, feasible, and flexible

DNA-like notation	Actionable rendering in display and comments
<pre>@FLDr( foldHead ,) imgURL ,) videoID ,) emBody.. )@</pre>	<p>The DNA-like notation in brief is profound to express follows:</p> <div style="border: 1px solid #ccc; padding: 5px; background-color: #f9f9f9;">  </div> <p>Where:  <i>foldHead</i>: George Washington archive ...  <i>imgURL</i>: the icon is <i>actionable</i> to play the video if exists  <i>emBody</i>: the folder body via “arrow” to extend or shrink beneath</p>

**Table 1.**  
 An illustrative “DNA-like” notation to serve rendering with semantics.

multidimensional data analysis for business intelligence (BI) and decision support applications. iOLAP represents innovative OLAP that makes CMD triad actionable, interactive and manipulable for intelligent UnIX service through algorithmic online analytics and machine learning. iOLAP aims to computationally examine facts and information for decision-making. For instance, **Table 1** illustrates an intelligent pattern of @FLDr that the archival “foldHead” is associated with a playable “video”, which makes sense on how to drive machine learning to commit AIM for actionability, interactivity and manipulability.

Machine learning is about using historical search probabilities in order to generate expected search objectives, solutions, and applications given the user’s input action, query, subject, vocabulary choices, problem, or question. Given lack of context, the response may be generic in scope. Whereas, given repeated uses by an individual or group, the specialization may ensue in order to better fit an intended outcome or focus. Jargon may skew the result culturally or possibly even sub-culturally. This could lead to positive results: quicker utilization and responsiveness; negative results: stereotypical discrimination; irrelevant results: similar nomenclature, but unconnected material; bad results: silo dead ends. Ultimately, machine learning must not be in a vacuum. It must be done with context and in connection to these other features within the utilization of an archival system.

Consequently, iOLAP has applied machine learning on deep learning that fulfills online service with abilities to learn without being explicitly programmed, as illustrated in **Figure 1**. Feasibly, computational thinking can be applied to UnIX among CARE, DATA and wiseCIO for better user experience through algorithmic machine learning [13]. Most importantly, UnIX-CARE makes it possible that an end-user could be a webmaster, a web designer, or an ordinary user who enjoys and engages with web exploration.

**Table 2** as derived from the previous table, describes multiviews of @FLDr pattern with AIM at wiseCIO of actionability for informative delivery, DATA of manipulability on integral content management, and CARE of algorithmic interactivity for UnIX characteristics.

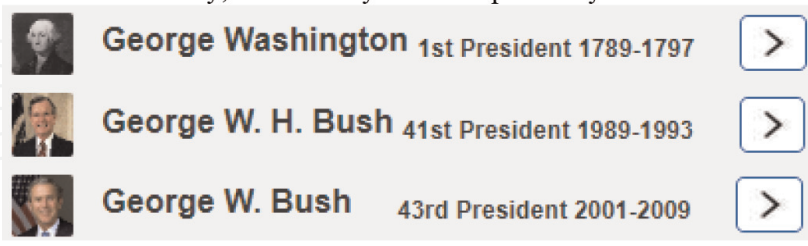

Cloud-based collaborative archive repository express takes good CARE for CMD between DATA and wiseCIO via machine learning whose AIM is clear to be actionable, interactive, and manipulable for cloud intelligent service, as discussed below.

### **2.3 Informative content delivery for decision-making**

Informative content delivery represents digitalization or digital transformation from integral content (under managed as DATA) to informative delivery (as intelligence on wiseCIO). Better user experience signifies information useful to and deliverable for end-users to act and interact with the remote service (decision-making) [14].

One of the significant values in a practical approach toward UnIX is fold-out / fold-up of the detailed content (e.g. under the profile) as bodies. An end-user at his/her first glance at the profile is the foldHead the most attractive to explore, the secondary the image-related video (or some other multimedia) to play, and last (not least) folder body to open, all of which embodies user experience for readers’ curiosity to be satisfied with spontaneity that enables individualization, interactivity, and independence.

User-centric experience aims at encouragement of exploring in contextual breadth (self-paced spontaneity) and browsing in hierarchical depth (in-&-out interactivity). It is easier to understand the interactive hierarchy without page-swapping while browsing the profile folder (**Table 2**).

DATA	@FLDr( foldHead ,) imgURL,) videoID,) emBody )@
UnIX-CARE	#>FLDr ⇒ *[ ;) foldHead ,) items, ... ]* #>FLDr is the key for machine learning multiple profile folders via iterative bracket: *[ ;) ... ... ]* ;) foldHead is the secondary key for each single folder
wiseCIO	AIM-actionability, interactivity and manipulability as follows: 
AIM for UnIX (fold-out/fold-up)	Algorithmic interactivity via fold-out / fold-up as follows: 
DATA ← wiseCIO ← CARE → DATA → wiseCIO	

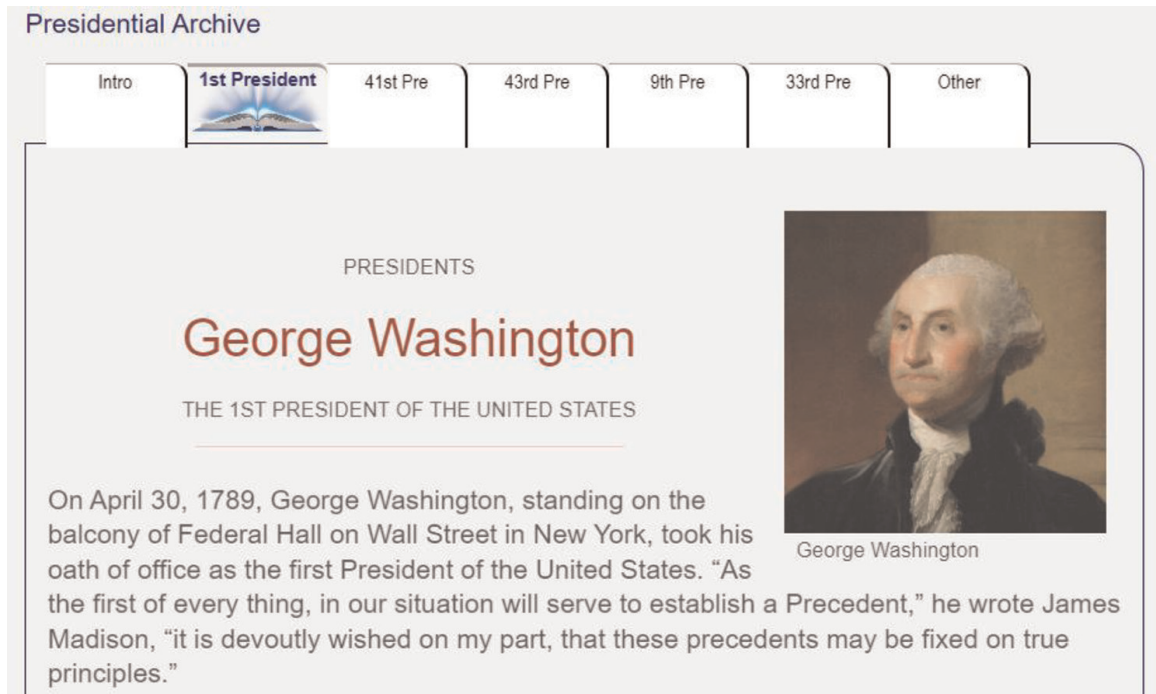
**Table 2.**  
 Further illustration for “DNA-like” notation to serve rendering with actions.

On the other hand, contextually self-paced spontaneity encourages individualization while a user’s exploring in breadth. A good example is a group of multi-news presented in collaboration with each other. Both universal interface (without explicitly coding) and user-centric experience are applicable through the following example in **Figure 2**.

**Figure 2** discloses that excellence of UnIX is applicable on how to group multiple profiles for contextually self-paced spontaneity in breadth while exploring without a fixed order. UnIX promotes user-centric experience that has been successful through both hierarchical interactivity and contextual spontaneity. In practice, UnIX has been successfully applied to advanced instructional delivery (AID) for the sake of hybrid learning engagement, and surely applicable Anything as a Service in business, education and entertainment.

As a matter of fact, traditional web content delivery could commit some unfriendliness, and it would be against psychological observations in terms of user interface that causes poor user experience: (a) too much information on a given web page that would be destructive to users’ attention according to Dr. George A Miller [15]; (b) monotony in the mind causes boredom to mental fatigue by repetition and lack of interest in the details of presented works online that require continuous attention paid to. According to “Eight Reasons Why We Get Bored” [16], too much of the same thing





**Figure 2.**  
*Contextually self-paced spontaneity for individual interests in breadth.*

and too little stimulation can cause in its victim an absence of desire and a feeling of entrapment.

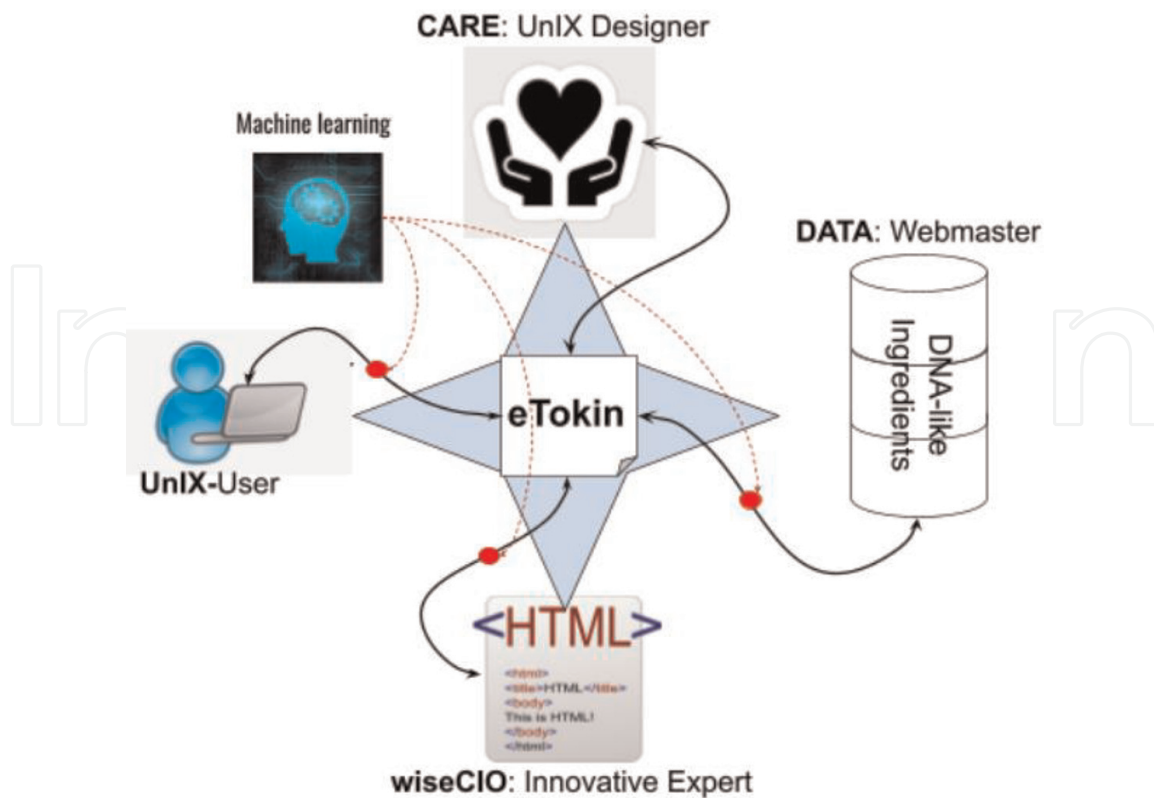
wiseCIO has fulfilled informative delivery via universal interface for better user experience that is user-centric via hierarchical interactivity, and user-friendly via contextual spontaneity. Browsing in depth through hierarchical interactivity enables fold-out (to disclose hidden information) when desired to go into, and fold-up (to hide from too much information) from the first glance, which greatly assists the magical number of  $(7 \pm 2)$  applied to better user experience. The self-paced interests are satisfied by contextual spontaneity in breadth without a fixed order to explore, which wisely promotes avoidance of boredom in light of monotony in the mind [15, 16].

Further discussions will be conducted on how UnIX through Collaborative Archive Repository Express automates ideal informative delivery without explicit coding required.

### 3. CARE for UnIX via archival repository express

Cloud-based collaborative archive repository express aims for bridging DATA for integral content with wiseCIO for informative delivery where express tokens for information interchange (eToken) are creatively introduced for universal interface & experience through elastic process automation. Similar to popularly used data formats such as XML and JSON [17] for C/S Architecture, eToken is collaborative, text-based and more advanced (than XML/JSON) to support seamless intercommunications among the CMD triad.

It is "DNA-like" archival express (eToken) that propels semantic enrichment during seamless intercommunication, as illustrated in **Figure 3**.



**Figure 3.**  
 Collaborative archive repository express among CMD triad via eToken.

**Figure 3**, from the perspective of a UnIX Designer, discloses CARE for eToken-oriented CMD triad through seamless intercommunications (arrows pointing toward) and semantic enrichments (away from eToken) among three CMD parties: CARE, DATA and wiseCIO. Intercommunications toward eToken perform implied elimination of trivial information without redundancy to guarantee integral content management, and semantics away from eToken propels enriched activation of functional AIM for actionability, interactivity and manipulation without explicit coding required for informative delivery. Both trivial elimination and tactical enrichment are intelligently relying on deep learning experience, and automated elastic processes via machine learning (as denoted by dotted arrow lines).

### 3.1 “DNA-like” archival express for universal interface

“DNA-like” archival express enables universal interface & experience (UnIX) with which ordinary users can be made cohesive professionals to play multiple roles, such as UnIX Designer, Innovative Expert, and Webmaster via machine learning through elastic process automation, shown in **Figure 3**. The webmaster ensures technical aspects of a website over DATA, and the expert aggregates iBEE on wiseCIO, and the designer proposes CARE for universal interface & experience.

By using “DNA-like” archival express, cloud-aided DATA via machine learning acts like a webmaster for integral content management with high-speed accessibility to virtual containers, folders, and URL-related multimedia, so as to feed wiseCIO for informative delivery without unnecessary page swapping. Let us take a folder as an example: a profile folder (stated in **Tables 1** and **2**) usually represents a composite item with a caption and an arrow button that can be clicked to open with its body

extended beneath, or to close with it shrunk. This embodies user-centric experience browsing in hierarchical depth via “in-&-out” interactivity. E.g.,

```
@FLDr( foldHead ,) imgURL ,) videoID ,) emBody )@
```

The @FLDr(... )@ denotes a profile folder in “DNA-like” archival express that is well archived with a group of ingredients specified as a **foldHead**, an **image** button that enables to play the multimedia underneath, and an **arrow** button that controls extension / shrinkage of the folder body. How the profile folder is rendered remains unspecified until machine learning automata is triggered (dotted arrow lines in **Figure 3**) to enrich semantics for informative delivery.

Collaborative archive repository for information interchange among the CMD triad involves text-based content that is digitized and stored in “DNA-like” eToken to represent folders, containers, URL-related images and multimedia, and semantic patterns. “DNA-like” archival express is capable of digital archive with integrity endured for the sake of *transmissible* retrieval with *minimal* bandwidth, and *elastic* process automation for online analytics. Transmissible retrieval means applicable, optional and operational fulfillment of cryptography depending on the level of enforced security; elastic process automation represents algorithmic interactivity to accommodate universal interface & experience (UNIX).

### 3.2 Express tokens in collaboration within CMD tirad

Collaborative archive repository express introduces “DNA-like” archival express, or express tokens for information interchange (eToken) to provoke seamless intercommunications among the CMD triad in comprehensive collaboration so that three CMD parties, such as CARE, DATA, and wiseCIO, can feed to and/or retrieve from each other. By instant typing online publishing (iTOP) “DNA-like” eToken is utilized to describe “what to do” for the sake of seamless intercommunications, but leave “how to do” unspecified in light of semantic enrichment that highly relies on algorithmic machine learning.

So CARE for universal interface & experience helps to make an ordinary user a webmaster capable of managing integral content, an innovative expert able to aggregate and deliver useful information, and a novel designer to create the universal interface for better user experience without explicitly coding required. “DNA-like” archival express (eToken) for information interchange between CMD parties is context-neutral, text-based and cryptographic when describing *instant* publishing, *integral* management, and *informative* delivery until applied rules have been chosen for machine learning specifically at runtime. The applied eToken “implants” feasibility and flexibility for UNIX to become reasonable and possible through elastic process automation.

One of the strategies of choosing “DNA-like” eToken for information interchange is SnR: sufficiency and no redundancy—*sufficiency* means good enough to fulfill semantic enrichment for aggregating information on wiseCIO; *no redundancy* minimal as necessary to support online analytics over DATA with consistencies. For instance, a series of folders described in dictionary eToken pairs:

```
#> Presidential Archive :> values for the section  
;] 1st President :> values for the profile  
;] 41st President :> values for the profile
```

;] 43rd President :> values for the profile  
;] Others :> values for the profile

Where

#> triggering machine learning for semantic enrichment with AIM for  
actionability, interactivity and manipulability  
;] leading a profile folder in dictionary eToken pairs iteratively  
:> split into a Key-Value pair, and “values” set  
in a list with more or less parameters applied to the profile.

The above dictionary eToken pairs represent the “DNA-like” archival express with flexible sizes for rows (folders) and columns (more or less parameters). The dictionary pairs look like general data formats (XML/JSON), but are much more advanced than XML and/or JSON in light of machine learning automata implanted for UnIX through elastic process automation. The dictionary pairs are highly intelligent with AIM for actionability, interactivity and manipulability—under a specific context, the runtime situates machine learning rules in the context to fulfill semantic enrichment for informative delivery via wiseCIO, or integral content for online analytics over DATA. More importantly, text-based eToken is the utmost core underneath in support of both seamless intercommunications and semantic enrichment among the CMD triad, as discussed afterward.

How a specific machine learning rule is situated under a given context will be thoroughly discussed next.

### 3.3 Collaborative intercommunications among CMD triad

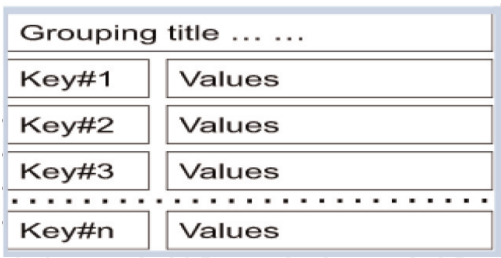

Collaborative archive repository takes good CARE of Anything orchestrated as a Service via algorithmic machine learning, which establishes seamless intercommunications among three parties so that interoperability via joint tasking is made automated, interactive, and responsive (AIR).

Instant publishing takes initial CARE to prepare integral content under managed over DATA, and integral content enables wiseCIO to promote informative delivery. Furthermore, wiseCIO propels interoperability over joint tasks via innovative online analytical processing (iOLAP) for better user experience with DATA. As previously discussed, eToken is text-based, and created as express tokens for information interchange to promote elastic process automation through Seamless intercommunications between distributed parties of the CMD triad incorporating data transmission with joint tasking .

The basic strategy applied to express tokens is to *suffice* with AIM at actionability, interactivity and manipulability, and *minimize* data storage without redundancy, *encrypt* networking transmission via cryptography. Text-based eToken for seamless intercommunications has some similarities to, but is much more advanced than JSON, and/or XML [17]—intelligent (“DNA-like”) ingredients are related to algorithmic machine learning without explicitly coding required. Consequently, CARE is expressed in text-based eToken to incorporate AIM for actionability, interactivity and manipulability on UnIX.

One of the obvious examples is to situate a specific machine learning rule for a smartphone of a narrow screen, or a laptop of a wide screen, respectively. A smartphone may prefer a bulleted list (V-layout) to a multi-tab array (H-layout) for multiple profile folders in light of the width of the device screen.



iTOP	eToken for UNIX Design	Interfacing in UI Dictionary
In-between mappings	<b>Grouping title :&gt; ...</b> ;] Key#1 :> folder values ;] Key#2 :> folder values ;] Key#3 :> folder values ;] Key#4 :> folder values ;] Key#5 :> folder values	
V-layout (bulleted list)	AIM at multiTab layouts (actionable, interactive, and manipulatable)	
		

**Table 3.** Contextual spontaneity in breadth for self-paced interest in browsing.

**Table 3** shows ideas of how “DNA-like” eToken (that is text-based across the CMD triad) turns out to be *context-sensitive* via semantic richments for informative delivery on wiseCIO, *context-innovative* via integral content management for online analytics over DATA, *context-neutral* via for seamless intercommunication for instant publishing by UNIX-CARE. The text-based eToken and its equivalence UI Dictionary play a key role in human-computer interfacing for user-centric experience through elastic process automation without explicitly coding required. However, algorithmic machine learning is *context-specific* at runtime where iTOP embodies CARE in some ways by which instant typing online publishing supports: (a) text-based eToken for content management in storage, online analytics, and machine learning rule-driven automation as well, (b) interactive editor in UI Dictionary without markups required so that everybody can perform UI design, and (c) bidirectional conversions between text-based eToken and UI Dictionary.

### 3.4 Machine learning-activated semantic enrichments

UNIX-CARE, conceptualized as bridging between DATA and wiseCIO, has three “i” objectives in mind to advance *instant* publishing in “DNA-like” archival express, accumulate *integral* content, and aggregate *informative* delivery as a whole across the CMD triad. Machine learning helps to activate semantic enrichment from “DNA-like” archival express (eToken) to wiseCIO for Anything orchestrated as a Service.

Superficially, “DNA-like” eToken looks like traditional XML or JSON, but they would be in vain without intelligent service. “DNA-like” archival express in eToken is not just utilized in data formats, but empowered by algorithmic machine learning where semantic enrichments orchestrate Anything as a Service with AIM for following characteristics:

*Actionability*—wiseCIO is created for informative delivery and actionability represents an ability to turn web document into a live website from deafness (no or less action) to dedication to servicing the users to act—an end-user to browse, a webmaster to administrate and/or a web designer to create cloud-based content under managed over DATA.

*Interactivity*—universal interface is automated on wiseCIO to enable users to communicate with the remote server to request, and/or to be prompted to react—the interactivity here is more than just to swap the current page to a new page via anchored tags, such as buttons, hyperlinks, etc. Algorithmic interactivity is made for active collaboration, friendly incorporation and rapid assembly or integration of Anything as a Service.

*Manipulability*—DATA is built up by accumulating various data in “DNA-like” archival express and manipulability aims for back-end operating, processing and, for instance, control over joint tasks for interoperability that composes smaller servicing parts into a larger service. Manipulability utilizes operating technologies (OT) on the remote server to support online analytics, and supply computing resources, and synthesize “Anything” as a Service—applied information technologies to intelligence for business, education and entertainment (iBEE).

Semantic enrichments through algorithmic machine learning provide AIM for automated UnIX that is to be actionable, interactive and manipulatable. Let us recap the profile folder for the 1st President of the USA: George Wahshington, then evolved from the simplest @FLDr( ... )@ that represents a well archived folder to multiple folders (**Tables 1** and **2**). Each one of the profile folders is extensible and shrinkable by clicking the arrow button, which embodies successful semantic enrichment from @FLDr( ... )@ to be actionable, interactive and manipulable. With “DNA-like” archival express that is context-neutral, wiseCIO becomes smarter than ever to lay out in a bulleted list (V-layout) or multi-tab layout (H-layout), illustrated in **Table 3**.

The “DNA-like” eToken-enabled semantic enrichments from a single profile to multiple folders maintain the core AIM for actionability, interactivity and manipulative, but as the number of folders is increased, both V-layout (for narrow screen) and H-layout (for wider screen) will not work properly, so the AIM should be empowered with new actionability, interactivity and manipulability by semantic enrichments, shown in **Figure 4**.

**Figure 4** addresses a much more intelligent solution to UnIX for the complex archival express through semantic enrichments. A foldable list is defined as a large number of profile folders and derived from both bulleted list and multiTab layout. The use case is about how to archive all 46 Presidents of the USA from the 1st President George Washington to 46th President Joseph R. Biden, Jr. Either V-layout (too high to scroll) nor H-layout (too wide to fit) would work well. A foldable list only occupies the screen space, the same size of a single folder, but the number of items in the list can be flexible, pretty large.

As a good example, a foldable list can be described by “DNA-like” eToken that is context-neutral and empowered by semantic enrichments with AIM for actionability, interactivity and manipulability where algorithmic machine learning



**Figure 4.**  
*“DNA-like” archival express empowered with a number of profile folders.*

play a key part in seamless intercommunication and semantic enrichment among the CMD triad.

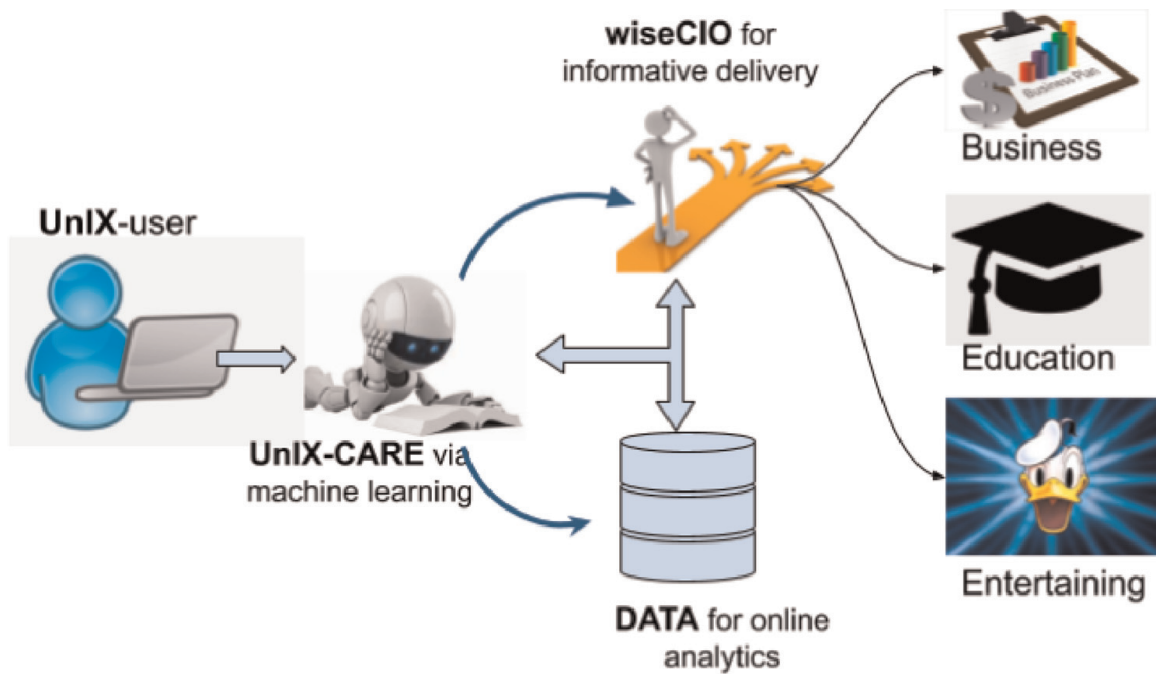
#### 4. iBEE via online analytical processing

Collaborative archive repositories express promises to take CARE of integral content management (over DATA) and informative delivery (via wiseCIO) of intelligence for business, education and entertainment. Innovative online analytics has been utilized to support decision-making via machine learning patterns [18], as illustrated in **Figure 5**.

**Figure 5** shows UnIX-CARE that acts as double bridging between DATA for integral content management and wiseCIO for informative delivery, and between users and intelligence-driven Anything as a Service. Machine learning is central to context-neutral description in the “DNA-like” archival express that “implants” feasibility and flexibility for UnIX to become reasonable and possible through elastic process automation. The implanted flexibility makes it possible for wiseCIO to vary universal interface & experience without explicitly coding required, and the feasibility enables semantic enrichment with AIM for actionability, interactivity and manipulability. Furthermore, “DNA-like” archival express (eToken) collaborates with DATA for integral content management and wiseCIO for informative delivery among the CMD triad as a whole as an activator of machine learning to orchestrate Anything as a Service.

##### 4.1 Innovative online analytics via elastic process automation

A web-based cloud intelligent service may involve very complex scenarios in order to support a large variety of specific situations. The elasticity of automation represents a flexible and feasible process that is able to adjust and cover through specific scenarios while staying within the mainstream. Algorithmic processing, as part of machine



**Figure 5.**  
 CMD triad serves the user with UnIX for iBEE.

learning, fulfills online analytics that computationally examines information to find useful patterns [13, 14, 18], so how to recognize the context under a specific situation is quite dependent on “DNA-like” archival express that becomes the foundation of innovative online analytics.

A pattern with parameters implies a particular way by which a piece of algorithm can be derived to get some job done and some content organized. Parameterization enables elasticity for procedural automation. **Table 3** explicitly illustrates a good example of elastic process automation as follows:

```
@FLDr( foldHead0 :> imgURL ,) videoID ,) emBody
;]foldHead1 :> imgURL ,) videoID ,) emBody
;]foldHead2 :> imgURL ,) videoID ,) emBody
;]foldHead3 :> imgURL ,) videoID ,) emBody
;] ... ...
)@
```

Where

**@FLDr** stands for a pattern providing a means in which a folder is presented. **Parameters** videoID denotes some elasticity of particular ways to play multimedia as embedded parts. wiseCIO is smart to play such multimedia as video, audio, traditional website, and anything via a URL that a browser can open. **More significant elasticity** is “trade-off” between V-layout, H-layout, and Foldable List of grouping profiles via algorithmic interactivity according to the view resolution.

Innovative online analytics through algorithmic interactivity represents parameterized solutions to content management and delivery via machine learning with



patterns. Semantic enrichment via algorithmic interactivity helps to vary for universal interface & experience as “One-Size-Fits-All”.

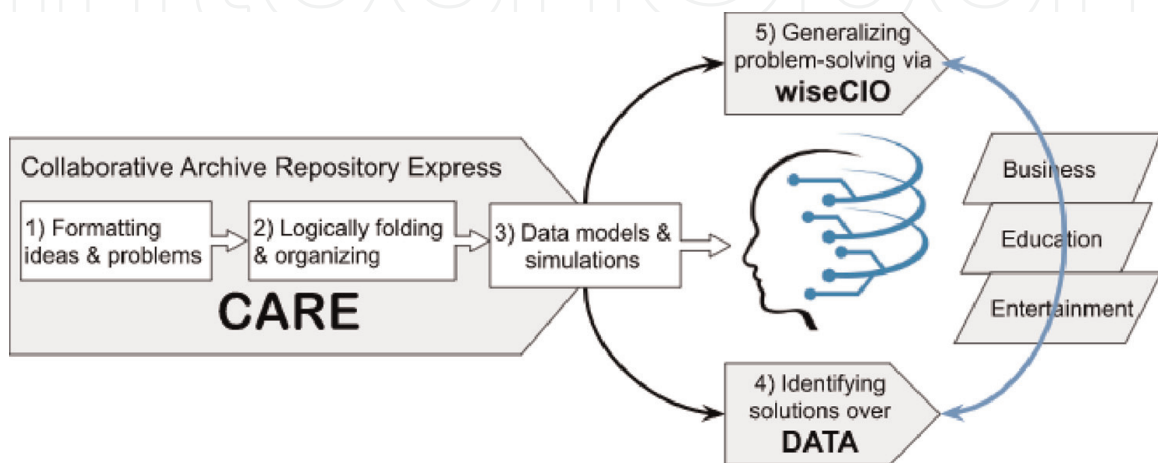
#### 4.2 Business intelligence via automated processes

Business intelligence is to utilize business data to drive decision making, which has become one of the significant objectives of intelligence via online analytics for business, education and entertainment (iBEE). In information technologies, wiseCIO takes CARE of intelligence to embody innovative online analytics through elastic process automation over DATA. In order to make decisions for business success trustworthily and dependably, reliable data is required to be IDEA (integral, digestible and elastically available).

“Business Intelligence” (BI) may be a generalized term, and it could be specialized for instructional / educational, or entertaining (business) intelligence, all of which is assumed to support decision making. Basically intelligence represents thinking ability, reasoning ability to understand and learn well in order to form judgments and opinions based on reason. The CMD triad propels computational thinking of “DNA-like” archival express for intelligence through elastic process automation.

According to the operational definition of computational thinking [11–13], computational thinking can be fulfilled in a feasible, operational and optimal approach. The CMD triad considers it done to get computational thinking through algorithmic problem-solving processes (shown in **Figure 5**) with operational activities such as: (1) by formatting problems “DNA-like” eToken enables a computer to help solve those problems, (2) by analyzing data, “DNA-like” archival express establishes a transformational foundation over DATA, (3) by representing data through models and simulations, UnIX-CARE acts as a “fastlane” through elastic process automation, (4) by identifying, analyzing, and implementing possible solutions DATA aims for the goal of achieving the most efficient and effective combination of steps and resources, and (5) by generalizing a problem-solving process, wiseCIO transfers the liaison with UnIX to a wide variety of problems.

**Figure 6** Computational thinking via CMD triad is *feasible* via algorithmic interactivity to liaise with UnIX. It is also *operational* through elastic process automation and *optimal* for intelligence-driven decision making for Business, Education and Entertainment (iBEE). The highlight in terms of major contribution of CMD triad is applicable orchestration of Anything as a Service for decision-making, as detailed in Section 5.



**Figure 6.** Computational thinking is feasible, operational and optimal via CMD triad.

### 4.3 Educational excellence via collaborative efforts in learning

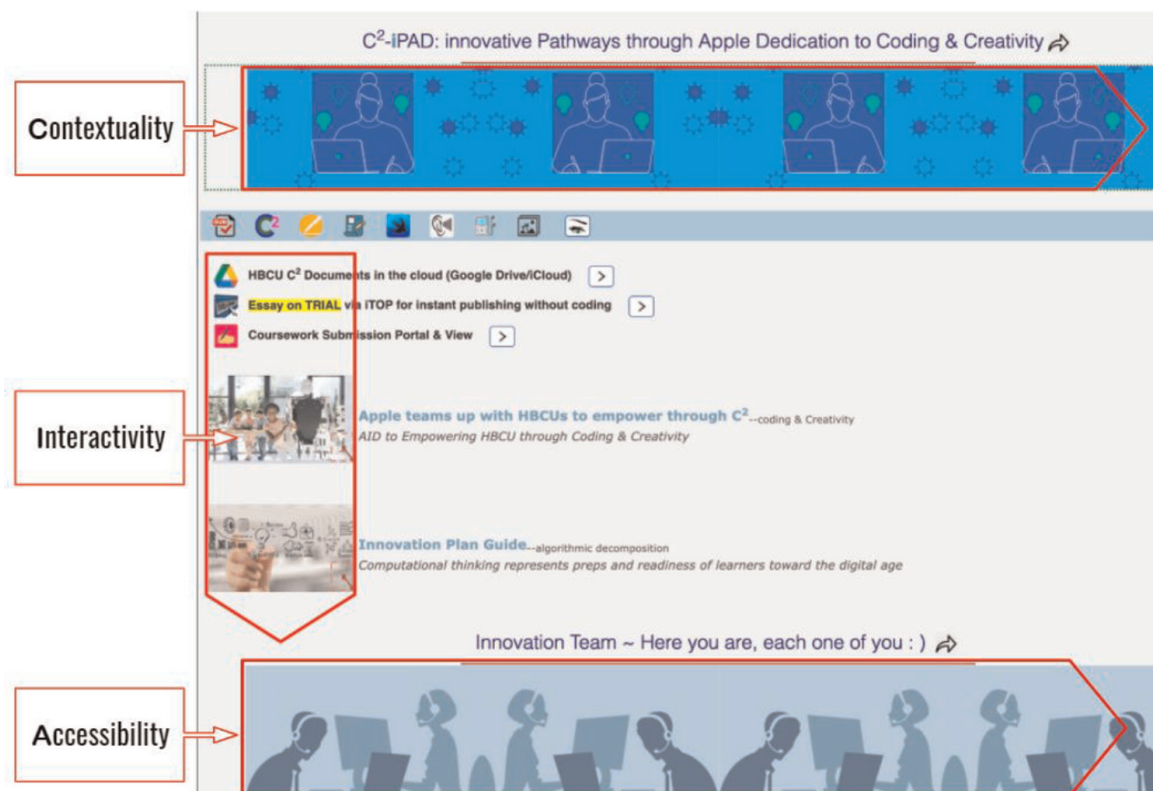
EXCEL—educational excellence via collaborative efforts in learning is considerably a specialized “business” that helps to excel education for student success. Generally instructional content under managed over DATA represents courseware design with aims for hybrid learning purposes, and instructional delivery via wiseCIO as intelligence to assist an instructor and/or students to make decisions on where, when, and how to browse in-depth hierarchy, or glance in-breadth context, and in-detail access, all of which assists to target educational excellence via collaborative efforts in learning (EXCEL).

UnIX-CARE strongly associate educational excellence with CIA-directed courseware presentation [14] of *Contextuality*, *Interactivity* and *Accessibility*: spontaneous contextuality enables exploring in breadth, sequential interactivity encourages browsing in depth, and sustainable accessibility enacts visitation in detail, which decisively promotes instructional engagement for student success, illustrated by **Figure 7**.

**Figure 7** presents a CIA-aided courseware via a cloud-based intelligent service to promote educational excellence for student success. The courseware of CIA propels comprehensive engagement in a hybrid instructional approach throughout: (a) contextuality in breadth to meet the spontaneous needs of individuals to overview the content, (b) interactivity in depth to dedicate students sequentially through learning process by one after another, and (c) accessibility in detail to incorporate sustainable advancement with individual coursework published as profiles,

CIA-aided courseware is organized and discussed in following aspects:

*Spontaneous contextuality* is embodied by the top-folder bar that organizes multiple aspects beneath via a multiTab so that individuals can spontaneously explore with self-paced interests—a student may first glance at what is about the course he/she



**Figure 7.** CIA to excel education via contextuality, interactivity and accessibility.

is to take. Individual users' spontaneity helps to get rid of "monotony" by allowing the individual to go on self-paced interests without any boredom.

*Sequential interactivity* aligning on the left layout presents major learning modules sequentially so that both instructors and learners can follow with lectures & labs, and coursework as the class goes on. Algorithmic interactivity with each learning module serves learners in browsing in depth via fold-out (going down into) and fold-up (getting out of)—collaboratively only one module is allowed in fold-out at a time, and the other will automate in fold-up.

*Sustainable accessibility* is reflected by the bottom-folder bar with an intermediate media where all students have their own profile-boxes for coursework submission—a student may access to his/her own profile folder, or utilize instant typing online publishing (iTOP) to submit coursework according to the sequential learning paces; an instructor has the privilege to view, grade and interact hybridly with individuals for review & revision, and advancement ( $R^2A$ -rising to grade A).

CIA-aided courseware acting like a "mirror" reflects educational intelligence to assist hybrid learning with collaborative efforts to engage for student success: educational excellence is embodied in self-paced interests via spontaneous contextuality, in-depth learning via sequential interactivity, and in-details via sustainable accessibility between instructor and learners.

#### 4.4 Netflix-like movie entertaining reactivator

Netflix is an American subscription streaming service and production company based in Los Gatos, California. Netflix can be accessed via web browsers or via application software installed on smart TVs, set-top boxes connected to televisions, tablet computers, smartphones, digital media players, Blu-ray players, video game consoles and virtual reality headsets on the list of Netflix-compatible devices. As a simulating service case, Netflix-like movie entertaining reactor (netFlyer) basically acts like Netflix to offer a film and television series library through distribution deals as well as its own productions. UnIX-CARE is presented here to provide users with the universal interface & experience by ultimately archiving all kinds of multimedia. With UnIX-CARE through the CMD triad as a whole, a Netflix-like reactivator performs integral content management over DATA and informative delivery via wiseCIO to enable contextuality in breadth for self-paced preview, and hierarchy in depth for serious movie watching. Self-paced preview acts as a heads-up on what a user wants to see, and serious movie watching means that security levels can be applied to manage and control accessibility for commercial purposes. As a vivid example, the hierarchical depth, multimedia at the higher level is more general and cheaper, and at a lower level, more special for higher profit, etc.

**Figure 8** illustrates a netFlyer service (NEMs) that presents a well-categorized archive: Multimedia Center (preview for free), Cartoon 2022 (for kids pleasure), c) Disaster 2020 (for shocking experience), etc. The netFlyer is well archived with multimedia as much as possible, but organized as neatly as novel to offer a set of universal interface that assists users to "*learn once for all*", and to prompt user-centric experience without often web page swapping. The netFlyer may go in such scenarios as a user explore: self-paced preview for free in contextual breadth, and "in-&-out" interaction for subscribers in hierarchical depth. Both free explorers and subscribers will enjoy previewing, watching videos, playing games, and so on, which demonstrates individualization and orchestration of Anything as a Service under netFlyer.





**Figure 8.**  
*netFlyer entertaining service for UnIX via contextuality and interactivity.*

More intelligently, a dynamic dropdown list is an algorithmic companion to the banner (say, Comedy 2022) as the user opens it to watch or preview items of multimedia, which automatically assembles a dropdown list that enables rapid accessibility without needing to re-open the same banner. Furthermore, it best embodies user-centric experience that the user opens and/or closes banners alternatively without leaving the current context, which is really beneficial to users. In particular netFlyer works perfectly for the user to enjoy by exploring a “oceanic” number of multimedia.

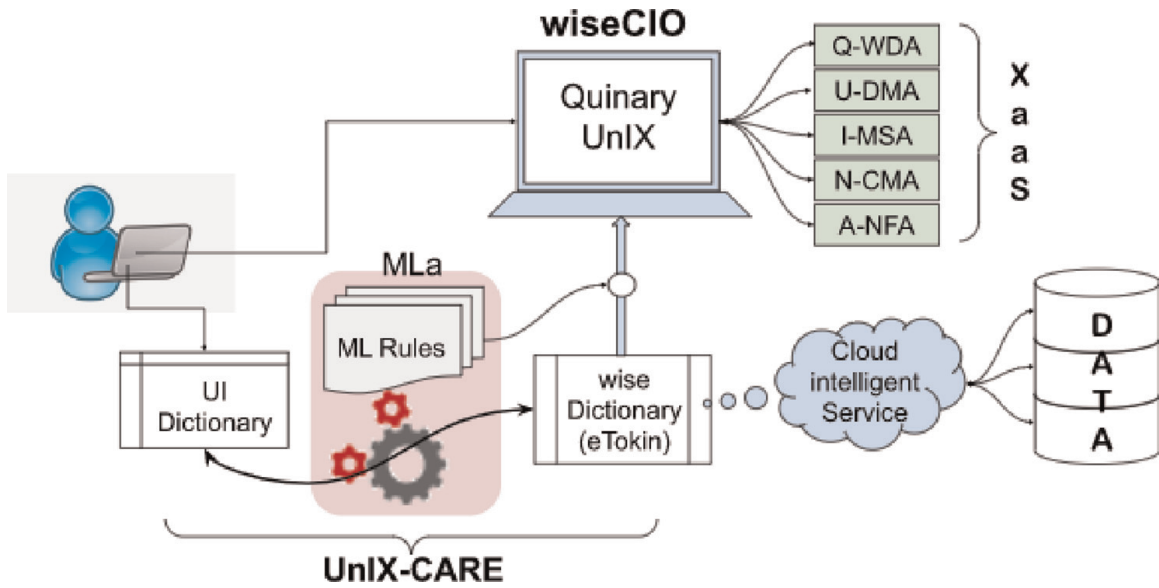
UnIX-CARE provides a fastlane for new multimedia to be published dynamically in “DNA-like” archival express to DATA and to explore via wiseCIO. Innovative online analytics is applied to netFlyer via machine learning as illustrated in **Figure 5** in which machine learning plays a key role in elastic processes automation for business intelligence to support decision making.

## 5. Quinary XaaS orchestration

Universal interface & experience (UnIX) represents a novel model for content management and delivery (CMD), and collaborative archive repository express (CARE) incorporates DATA into wiseCIO to orchestrate Anything as a Service. Quinary UnIX suggests quinary cases of Anything orchestrated as a Service based on the CMD triad as a whole to promote *instant* publishing, *integral* management, and *informative* delivery. Quinary UnIX provides quinary (five) servicing templates with aims at queryability, ubiquity, interactivity, novelty and availability.

**Figure 9** addresses Quinary Servicing Templates described in the “DNA-like” archival express as context-neutral in wise Dictionary and/or UI Dictionary in light of





**Figure 9.** Wise (eToken) dictionary takes CARE of web development over DATA.

seamless intercommunication. Algorithmic patterns [16] apply semantic enrichment to turn wise (eToken) Dictionary into context-sensitive Quinary UnIX. Deep learning enables universal interface design of context-sensitivity through elastic process automation. Consequently, context-sensitivity results from context-neutrality via algorithmic interactivity of REAP- retrievable (from the remote server), executable (on the client device), analytical (elastic automation), and pass-along (between wise eToken and UI Dictionary).

Machine learning, according to IBM Cloud Learn Hub [8, 9], is a branch of artificial intelligence (AI) through computational thinking, which focuses on the use of data and algorithms to imitate the way that humans learn, gradually improving its accuracy. In this article, thorough discussion will be conducted with heuristics that are used to initiate machine learning through following characteristics, respectively.

**Queryability:** word-driven aggregation (5.1)

**Ubiquity:** digital music avocation in composition (5.2)

**Interactivity:** montage-selected animation (5.3)

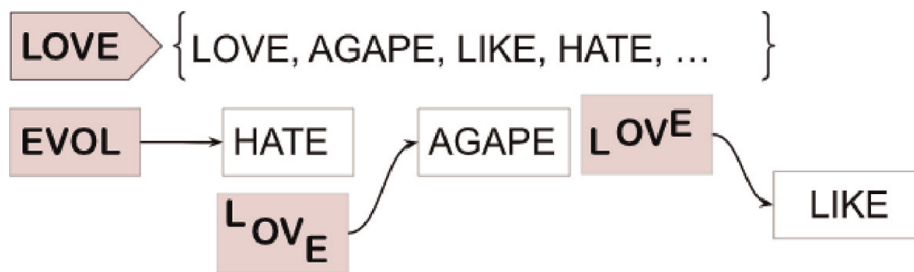
**Novelty:** computing machinery assembler of programmability (5.4)

**Availability:** customizable name-featured activation (5.5)

### 5.1 WDA: word-driven aggregation for queryability

WDA represents the first XaaS template that initiates heuristics of word-driven queryability for universal interface & experience (UnIX) on **comprehensive aggregation**. WDA promotes queries to draw users' attention to categorized words: synonymous or opposite, which strategically encourages flexible queries [19] by applying heuristic wording to facilitate the extraction of relevant word-related DATA for presentation.

**Figure 10** illustrates how WDA heuristics can be applied to query for variously relevant words, such as LOVE, AGAPE, LIKE, HATE, ... For instance, associating LOVE with a category of loving movies, a user drags the letter "L" lower than "E", which may lead less love ("LIKE") to series of multimedia. On the contrary, the letter "L" becomes higher than "E", which may lead to sacred love ("AGAPE") series of



**Figure 10.**  
*Heuristic queries aggregated by WDA for wording guess.*

multimedia. Inversive “LOVE” is “EVOL”, which may lead to the “HATE” (opposite) series, etc.

**Queryability** expresses something unsure of “what to explore” while a user is browsing a new / complex website. Therefore the wording guess heuristically encourages the user to ask for more information specific in his/her mind. Query heuristics can help the user into a specific field to explore, say APAGE series of multimedia. Machine learning is nothing to do from scratch, but provides a means of solving problems by discovering things itself and learning from its own experience. So an initial wording guess is a great heuristics to enable the user in proceeding with further exploration.

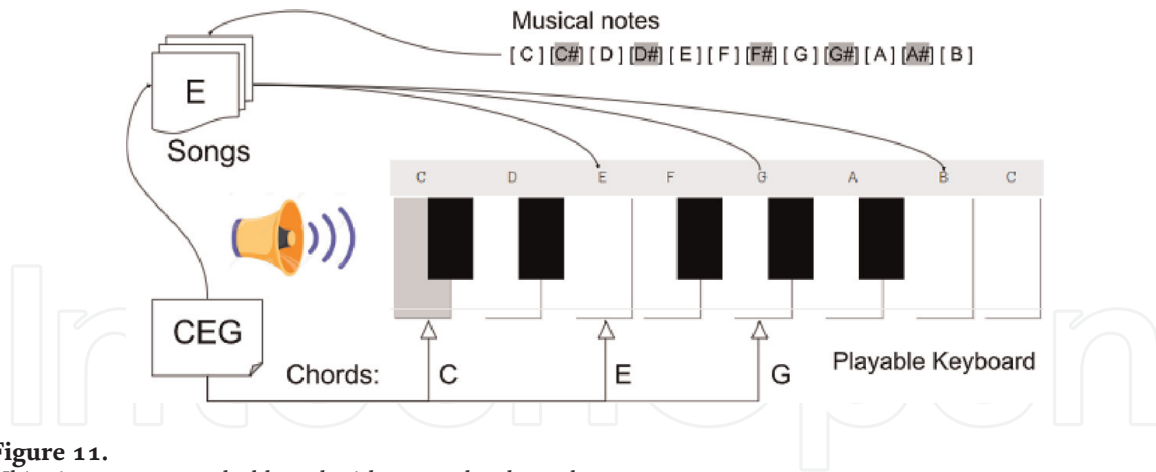
WDA showcase serves with a heuristic wording guess, then engages the user to go further and explore in more depth. In facing a giant number of entertaining resources, the wording heuristics becomes especially effective while exploring entertaining multimedia.

In cloud-based applications, WDA encourages queryability through active exploration to discover things that are interesting to the user from his/her own experience for individual pleasure in contextual breadth and enjoyment in hierarchical depth.

## 5.2 DMA: digital music avocation for ubiquity in composition

DMA represents the second XaaS template that initiates heuristics of digitally-advocated ubiquity for universal interface & experience (UnIX) on **creative composability**. DMA prepares ubiquitous compositions anywhere with an iPad or a laptop available and it does not matter with or without a musical instrument at hand. In general composability is a business principle that refers to the ability to combine modular business elements as needed [20, 21]. A simple DMA will do the trick on an iPad or a laptop to foster early-age musical education for little kids to recognize music notes and perform music composition for fun. It is also helpful for them to discover their talent in composing music through coding and creativity Vividly a kid does compositions of a “song” by selecting and putting musical notes into a queue and he/she can also make chords (playable at the same time) by putting two or more musical notes into the same position in the queue so as to play simultaneously.

**Figure 11** illustrates how DMA orchestrates Anything as a Service includes “Songs” to play, “Chords” to make, and “Keyboard” to play the musical songs. The XaaS composer for DMA initiates with musical notes that can be play individually by clicking the key on the Playable Keyboard, and a kid can also click the speaker (button) to play a reserve song, or make a chord by grabbing two or notes to add on to the base notes so as to play simultaneously, and so on. A little kid would be pleased to learn how to compose a song by purchasing a piano, but it is apparently so expensive before his/her parents could find out whether or not the kid is interested in musical



**Figure 11.** Ubiquitous composer dashboard with songs, chords, and notes.

composition. Obviously, a simple DMA on iPad or a laptop will be helpful to foster the kid in musical composition.

**Ubiquity** in composing makes “piano” everywhere available for musical composition that particularly embodies potential production or creation of music, poetry, or formal writing. Ubiquity via DMA aims to foster coding and creativity through computational and compositional activities.

DMA showcase serves Anything as a Service with a web-based keyboard that is made anywhere available to foster little kids to taste by composing songs, making chords with super ease. The heuristic virtual keyboard would be the first teacher to help kids recognize musical notes, try chords in direct experience of what a chord really means. It can also help code in practice, test in performance, and revise in progress to inspire creativity through programmable composition.

### 5.3 MSA: montage-selected animation for interactivity

MSA represents the third XaaS template that initiates heuristics of montage-selected interactivity for universal interface & experience (UnIX) on **vivid and friendly animation**. MSA promotes both manual and robotic operations for human-computer interfacing. Manual operations serve the user who gives it a try to test and preview animations, and robotics automates a process of multimedia to play and as it goes, the user can intervene the animation to stop and then enter the montage related content. A selected montage frame provides a means to control an animated asset that enables combinational animation sequences into a single asset. In a looping mantaged series, the user can view it like a movie until he or she breaks it up into sections for playback [22]. An animated montage series is conceptualized for operating interactivity to express human-computer interfacing automation.

**Figure 12** illustrates how a montage series plays slowly until the user finds his / her interest in the category of multimedia to play and browse in more depth. Let us use Mickey Mouse as an example. A little boy is watching the slowly-playing montage series from “Kung Fu Panda” to “Thomas Train”. He could try to click the montage “Donald Duck”, then he would be taken to the category underneath and stay to watch more he likes. He can also be back up to the montage series by clicking “Duck” via “in-&-out” interactivity.

**Interactivity** is animated to engage the user in the exchange of information between cloud-based Anything as a Service, and client devices, e.g., smartphone, tablet, laptop, and/or computer. The exchange of informative montage series is





**Figure 12.**  
*Animated montage series promotes operating interactivity.*

animated to control robots, play multimedia theater through robotic process automation, and so forth. In particular, MSA helps to enrich interactivity via wiseCIO to engage users with their exploration of entertaining services without boredom.

Everytime, when rendering a traditional website on the client screen, the view is almost the same as navigating header and/or footer, then a user has to scroll up/down to find a section of his/her interests in. The MSA prepares heuristics and/or visual “montage” via tab-based multi-sections to present preview animatedly until the user hits the section for better user experience.

The MSA supports human-computer interfacing via UnIX with heuristic scenarios to direct the user to preview primary categories of content, and which one to choose is quite customized.

#### 5.4 ACM: assembled coding machinery for novelty in programming

ACM represents the fourth XaaS template that initiates heuristics of computing machinery-assembled novelty for universal interface & experience (UnIX) on **computational thinking and programmability**. ACM is a simulator of coding to promote programmable user interface design, similar to, but different from MSA. While montage series in play may be sequential, Assembled machinery plays a series in programmable order, and maybe with choice-making. It utilizes an assembly-like language to create new apps in a visual approach, so an instruction is encoded as an actionable token that consists of at least three elements: (a) a number (code), (b) a wording description (action), and (c) a visual illustration, such as an animated GIF, a video, or an audio. ACM encourages users to create their own instruction set from which they can program fun stories or scenarios in a programmable (sequential and selective) approach.





**Figure 13.**  
Programmable series promotes operating novelty.

**Figure 13** illustrates how a programmable series plays slowly until the user finds his / her interest in the category of multimedia to play and browse in more depth. The upper part represents ACM, and the lower part extends the illustrative picture related folder. Let us use Crying Posture as an example. A user programs a series, tests and performs the slowly-playing programmable series according to the program at the running. The user could try to catch an illustrative picture or description of “CRY”, then by clicking he would be taken to the category underneath and stay to watch more he likes. He can also get back up to continue the programmable series via “in-&-out” interactivity. The ACM program is developed in an actionable tokens that relates visual illustrations dynamically, so program executing will produce a cartoonish movie that is runnable, presentable, playable, and programmable (rPPP).

**Novelty in programming** of data path processing is a universal feature in virtualized networks [23]. A given instruction series is executable through sequential (*one step after another*), and/or selective (*one or the other*) order for the sake of instructional teaching through computational thinking of programmability. Furthermore, the user can enhance the existing instruction set, or create a fully new instruction set for the coding machinery.

Theoretically, ACM showcase serves as a virtual coding machinery that supports coding algorithms by using the instruction set, which encourages coding and creativity to problem-solving in programmability.

Also ACM can enable rapid prototyping and responsive assembly from the well-categorized multimedia to help users explore various scenarios for kids, adults, and so on.

### 5.5 NFA: name-featured activation for availability in customizing

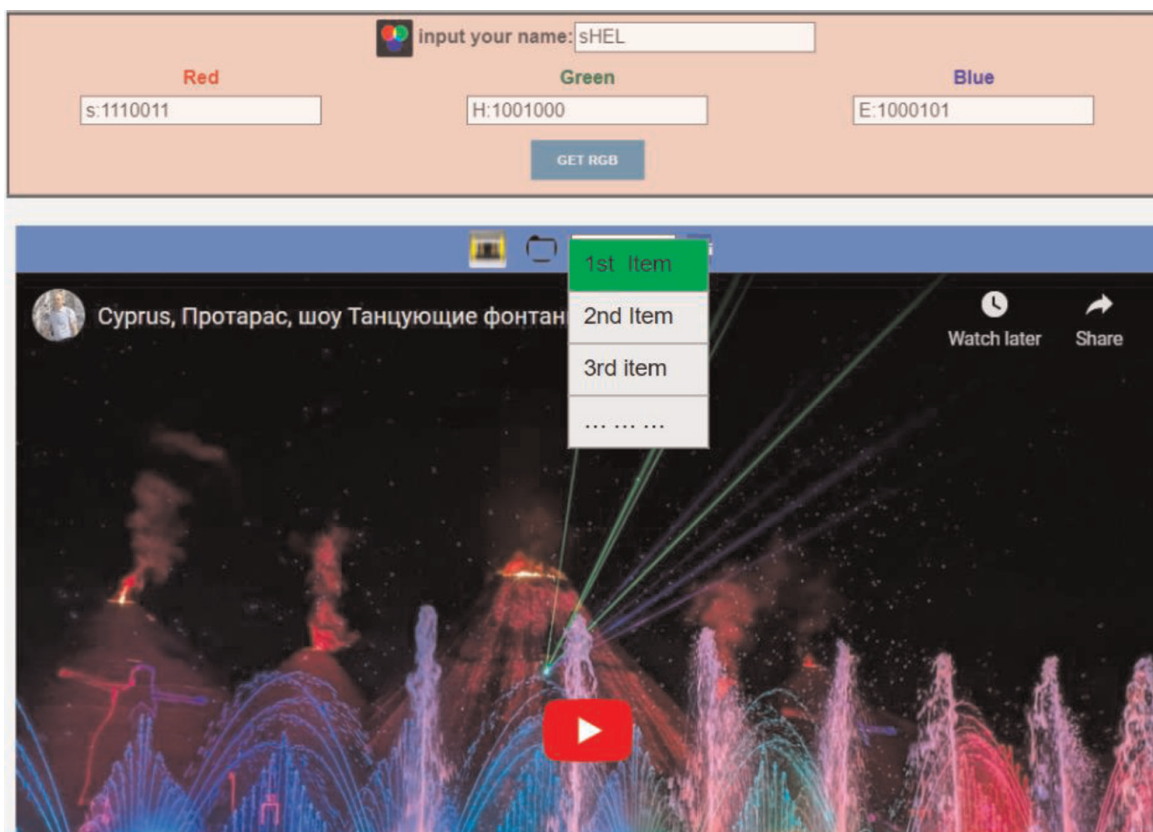
NFA represents the fifth XaaS template that initiates heuristics of name-featured availability for universal interface & experience (UnIX) on **customization or**

**individualization.** NFA prioritizes customizable availability based on individual names, which denotes heuristics to encourage users to explore entertaining multimedia, such as audios or videos without boredom. By inputting the user's name the customizable availability gets started—the name becomes a key in ASCII to trigger a group of multimedia for preview until the user chooses to intervene.

**Figure 14** illustrates how a customizable series is made available to relate users' interest in the category of multimedia to play and browse in more depth. The upper part represents the NFA section that allows the user to input the name and whose ASCII series is used to draw specific background color, and the lower part denotes multimedia list to play. Based on a user when he / she input the name, the random availability is triggered toward a group of multimedia (list) for preview.

**Customizable Availability** represents adjustment making responsively to accommodate a users' individual needs for the sake of better user experience engaging the user with something new via cloud-based Anything as a Service. Most traditional websites start with a search port in addition to header and footer for further explorations in breadth. It is very beneficial for a new-hand user to start with what to search and where to start. As initial heuristics, letters of a given name in ASCII are combined to bring out the customizable content for the user to get started with great ease.

Psychologically NFA showcase provides a customizable preview on the primary category of grouping content. According to Psychology Today—Hello, My Name is Unique [24], “Some parents want names for their children that are unique but not too trendy. Other parents seem to love alternative spellings. How important is a name to our self-perception?” A unique and special name will heuristically lead to pleasant experience while a user exploring entertainment through multimedia.



**Figure 14.**  
*Name-featured activation promotes customizable availability.*

NFA aims for responsive adjustment over multimedia grouping to accommodate a customer's particular needs for better user experience that encourages engagement without boredom.

## 6. Conclusion

UnIX-CARE or Universal Interface & Experience has emerged from Collaborative Archive Repository Express (CARE) that collaborates integral content over DATA with informative delivery via wiseCIO through algorithmic machine learning. Conceptualized as a “fastlane” into the CMD triad, CARE provides mathematical and computational solutions to achieve following UNIX objectives:

*Ubiquitous Manager* is everywhere across the CMD triad to harness *comprehensive* information for business, education and entertainment (iBEE), and to propel *composite* assembly of anything as a service (XaaS). With which the “controversial” agendas among IT personnel [5] have been resolved so that an ordinary end-user can be made a webmaster, a web designer and/or an extraordinary user while browsing in hierarchical depth via “In-&-Out” interactivity, and exploring in contextual breadth via self-paced spontaneity [14] without overwhelming, as discussed in Section 2.

*Novel Designer* takes CARE for universal interface design and user-centric experience by instant typing online publishing (iTOP) via express tokens for information interchange (eToken) differing from traditional XML and JSON [17]. In which iTOP, assisted by algorithmic machine learning, presents universal interface design that advances the aims at user-centric experience without explicitly coding required, as deeply studied in Section 3.

*Intelligent Expert* represents one of the CMD goals to aggregate intelligence for business, education and entertainment in support of decision-making. The CMD triad is collaborated with integral content over DATA and informative delivery on wiseCIO. Where digital archiving ensures integral content under managed by DATA, and intelligent service serves informative delivery by wiseCIO throughout elastic process automation with algorithmic machine learning [8, 9], as presented in Section 4.

*Extraordinary Liaison* facilitates human-computer interfacing via eToken to simplify collaborative communications without rendering related redundancies, but semantic enrichment that suffice to orchestrate Anything as a Service with machine learning patterns through elastic process automation [18], as discussed as Quinary XaaS in Section 5.

## 7. Visible accomplishments

This article presents following critical advancements technologically and practically through multiple best efforts to pave comprehensive roadmaps toward the above accomplishments:

**Novel Triad** provides comprehensively innovative solutions to cloud-based distributed problems for Anything as a Service that involves Automated interfacing Design (AiD for various users) via UnIX-CARE, Proactive online Analytics (PaA) over DATA, and User-centric Experience (UcX) via wiseCIO for the sake of capability of intelligence for Business (Section 4), Education (4.3-CIA) and Entertainment (4.4-Netflix-like Movies).



**Challenges (versus Chances)** on serving “controversial personnel” [5] turn from *controversial* agendas into *cohesive* advancement on the basis of seamless intercommunications (*context-neutrality*) among the CMD triad and semantic enrichments (*context-specialty*) through algorithmic machine learning, which propels large teams united and working together effectively. Algorithmically with practical methods implemented as intelligent services, the CMD triad assists to empower users to be cohesive professionals: like a webmaster over DATA, an interface designer via UnIX-CARE, and an intelligent expert on wiseCIO to discover useful and usable information in support of decision-making.

**Archival Express via eToken** for information interchange among CMD triad succeeds with a firm foundation for interoperability, the top level characteristics of networking applications, that enables orchestration of Anything as a Service. As an essential backbone, seamless intercommunication upgrades three CMD parties up to interoperability to ensure Anything-orchestrated as a Service, thoroughly discussed in Sections 4 and 5.

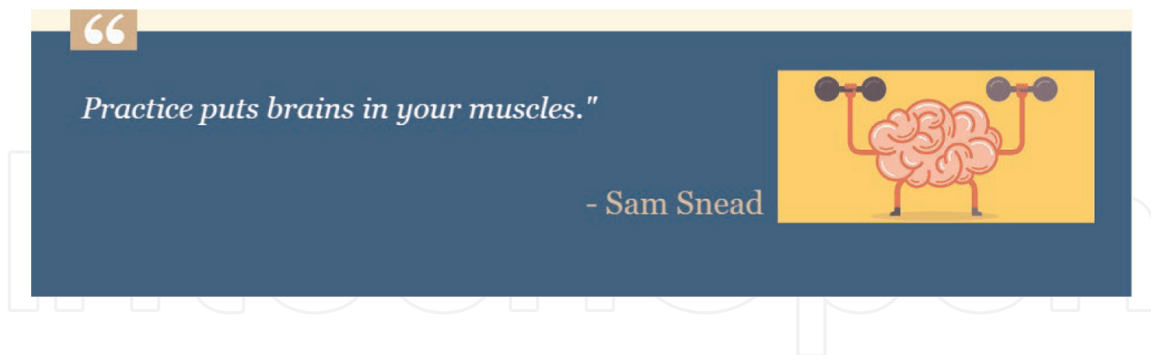
## 8. Future work & practice

In addition to feasible and visual accomplishments, there will be more efforts to make as future work in comprehensive practice as follows:

- a. *Algorithmic Deep Learning* (ADL) will be applied to discover learning patterns and usable rules in support of algorithmic machine learning with more active prompts for test-driven “sensors” or monitor to enable thorough analysis on archival express via eToken to advance semantic enrichments, instead of confused execution without a clue to fix potential issues because of highly-express tokens that would be too brief (?) for success through information interchange.
- b. *Sophisticated App Templates* (SAT) will be developed practically for domain-specific intelligent service (DSIS) and tested thoroughly with a full set of sampling data provided for deep learning on simple imports, execution and testing for algorithmic customizations. Sophisticated templates would be stable (*not to cause “earthquake” on the service basis in light of modifications*), flexible (*to encourage enhancement and enrichment of intelligent service with great ease*), and feasible (*algorithmic solutions are achievable*).
- c. *Advanced Research Machinery* (ARM) will be conducted on algorithmic sophistications to enhance computational thinking and programmability for machine learning that minimize explicitly coding but more through elastic and robotic process automation. In general, elasticity means flexibility of “multiple birds with one stone”—one solution to a family of problems, and robotics enables procedural automation over DATA encouraging self-fulfillment without much explicitly coding required.
- d. *Portable Online Intelligent Service* (POIS) will be discovered to reflect and represent Anything as a Service and put into practice with a strengthened “brain” in machine learning—through practice, we can gradually collect ourselves and learn how to be more fully with what we will do. POIS encourages



XaaS across platforms (iOS, Linux, Windows), and browsers (Chrome, Safari, Firefox, Microsoft Edge, and Opera, etc.)



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