BIT Velocity Executive Summary

Process Efficiency

Business / Information Technology Velocity (BIT Velocity) is a process to execute business objectives framed in terms of the IT systems that will be needed. The process begins with goals and leads efficiently to running systems to execute on those goals. The process can start with high level goals even if the goals are little more to make money.   Beginning with some vision of business strategy established, BIT Velocity provides a method of expressing strategic process as IT requirements, and increasing elaboration and detail.

BIT Velocity provides a structure of repeatedly asking *what* is needed and practitioners use creativity and skill at each stage to describe *how* to achieve what is needed. The *how* results from each stage are treated as the *what* inputs for the next stage.   BIT Velocity describes the framing of the how answers at each stage to assure that the process is contained, repeatable and efficient. The process is contained in that progress is always made toward a last step, which is the running systems needed to fulfil the goals. The process is built from the common elements repeatedly used for virtually all business initiatives involving large IT projects, independent of the staffing structure and company organizations involved in delivering them.

The efficiency of BIT Velocity is in enabling business stakeholders, architects, analysts, engineers, and code generators to speak a common language that greatly facilitates communication, eliminates duplicated effort, and maximizes automated engineering when realizing enterprise systems. The efficiencies act as a business accelerator through reduced cycle time on design refinement to foster market learning to fulfill business objectives to feed back into the business roadmap.

The BIT Velocity process can be thought of in 5 stages of definition that maximize code generation for faster build out of IT systems.

> **Business Stage**
> - Record business Goals
> - Define business strategy to achieve the goals
> - Define actors and actions in the business processes
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> **Scope Stage**
> - Define the business actions an information problem
> - Add physical world time and space definition to the information problem.
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> **Solution Stage**
> - Decompose the information problem into functional systems

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- Define the systems in buildable deployable runnable pieces

Engineering Stage
- Specify integration contracts amongst the runnable pieces to generate code.
- Specify testable behaviors of the runnable pieces.
- Code the behaviors.
- Define the parameters controlling specifics of infrastructure for the sizes of environments (QA, User acceptance, Production, etc.).

Deployment Stage
- Deploy the system into a run platform.

BIT Velocity is agnostic of staff organization but enables agile principles to improve velocity in two ways. First, BIT Velocity enables small teams to tackle broader scope and deliver larger systems with the efficiency of improved tools and processes. The reduction of team size itself provides a velocity enhancement due to the reduced communication effort and ceremony needed to keep cohesion in the direction of the team[1]

maintain needed improves efficiency
The speed and economy result from both automation, and the proven efficiencies of small teams. BIT Velocity has the power small teams need to build whole enterprise scale systems without adding more layers of teams and additional need for coordination because the manual coded behaviors are highly localized and can be widely dispersed without forming whole new teams.[2]

With BIT Velocity, architectural patterns can be classified by type, clearly and objectively specified, and summoned for composition into newer larger patterns for even faster enterprise creation.

This initial description of BIT Velocity is a fast tour from top to bottom, with call outs for additional work to specify the schemas, code standards and catalogs of patterns and first generation tools to improve build velocity. Only common currently available technologies are required to build out the first generation of tools.

Tool Evolution

In a more mature realization of BIT Velocity, more mature target platforms and pattern catalogs, will speed delivery of working systems.

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[1] Team Scaling Impedence.pdf

[2] BIT Velocity a concise overview see the prior work Objects and Operations as a Foundation for Architecture as Code

Since BIT Velocity provides a language for humans to describe architecture and build whole enterprise systems, generative AI will begin to play a larger role, mimicking common elaborations on business specification to rapidly complete the later stages of automated construction. Just as AI can now be asked to create "compilable" code and deployable page markup, with training examples, AI will also be able to assist in building whole working enterprise IT systems.

BIT Velocity defines the language to ask AI for enterprise systems.

The full paper under development and review is accessible by share at BIT Velocity