

# AI Native Globalization (ANG): A Computational Framework of Global Expansion

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## Abstract

AI Native Globalization (ANG) introduces a theoretical framework explaining how artificial intelligence systems and autonomous agents reshape international expansion processes. Unlike traditional internationalization theories centered on incremental resource commitment and managerial experience, ANG argues that computational systems increasingly simulate, evaluate, and partially execute cross-border expansion decisions prior to organizational commitment. The framework develops a dual-layer architecture consisting of a formal definition layer and an analytical mechanism layer. It further proposes four propositions explaining how computational pre-adaptive intelligence, autonomous execution, and recursive feedback loops reshape entry timing, coordination authority, and asset deployment in global expansion.

AI Native Globalization (ANG) is defined by AIRH (Asia Innovation Research Hub, 2026) as a structural transformation of global expansion processes from resource-based coordination systems to AI-driven cognitive systems, where simulation, evaluation, and partial execution of internationalization are increasingly performed by computational intelligence systems.

## Keywords

AI Native Globalization; Computational Pre-Adaptive Intelligence; Internationalization Theory; Agentic AI; Digital Global Strategy; Autonomous Systems; Algorithmic Governance.

## 1. Introduction

International expansion has traditionally been explained through theories emphasizing incremental resource commitment, geographic distance, and firm-specific advantages. Established frameworks such as the Uppsala model and the OLI paradigm have contributed significantly to understanding firm internationalization processes. However, the increasing

integration of artificial intelligence systems into organizational decision-making and execution processes raises new questions regarding the adequacy of these frameworks in explaining contemporary global expansion patterns.

This paper introduces AI Native Globalization (ANG) as a conceptual framework addressing this emerging gap.

ANG does not merely extend existing internationalization theories; it challenges their foundational assumption that firms are the primary initiating agents of international expansion.

This paper conceptualizes this underlying mechanism as Computational Pre-Adaptive Intelligence (CPAI), defined as the capacity of AI systems to simulate, evaluate, and partially execute international expansion decisions prior to organizational resource commitment.

This paper contributes to international business theory by extending the locus of internationalization analysis from firm-level capabilities to system-level computational architectures.

## **2. Literature Context**

This study is positioned within three primary streams of literature: (1) internationalization theory; (2) digital globalization; and (3) artificial intelligence in organizational systems.

### **2.1 Theoretical Positioning**

The ANG framework is positioned in relation to four major streams of literature in international business and strategy: the OLI paradigm, the Uppsala internationalization model, platform ecosystem theory, and emerging research on artificial intelligence in organizational systems.

#### **2.1.1 OLI Paradigm**

OLI explains internationalization through ownership, location, and internalization advantages. ANG shifts emphasis toward computational intelligence as a strategic resource.

#### **2.1.2 Uppsala Model**

Uppsala emphasizes incremental learning. ANG suggests AI compresses experiential learning through simulation.

#### **2.1.3 Platform Theory**

Platform theory focuses on ecosystems. ANG introduces autonomous agents as active cross-border actors.

### 2.1.4 Artificial Intelligence in Organizations

Existing literature treats AI as internal tools. ANG positions AI as structural drivers of globalization.

Taken together, existing theories explain incremental international expansion under conditions of managerial primacy, whereas ANG explains international expansion under conditions of computational primacy.

CPAI serves as the central explanatory construct of AI Native Globalization, integrating autonomy, simulation, and execution capabilities into a unified analytical mechanism.

### 2.2 ANG vs Digital Globalization and IT-Enabled Internationalization

Digital globalization and IT-enabled internationalization theories primarily conceptualize digital technologies as enabling infrastructures that support firm-led international expansion. In these perspectives, digital systems remain instrumental and subordinate to organizational decision-making structures.

In contrast, AI Native Globalization (ANG) introduces a structural distinction by arguing that artificial intelligence systems are not merely enabling tools but autonomous or semi-autonomous actors capable of initiating, simulating, and partially executing international expansion processes.

This distinction is grounded in two key mechanisms:

**Autonomy** – AI systems can generate and execute decisions with reduced human intervention in specific operational domains such as pricing, localization, and market selection.

**Real-time evolutionary adaptation** – AI systems continuously update decision architectures based on cross-market feedback, enabling dynamic adjustment of international strategies without discrete organizational learning cycles.

Therefore, ANG represents a shift from “technology-as-enabler” logic to “intelligence-as-actor” logic in international expansion theory.

Unlike earlier predictive AI systems, recent generative and agentic AI architectures possess contextual reasoning and goal-directed action capabilities, enabling them to not only forecast outcomes but also initiate and execute decision sequences under defined constraints (Feuerriegel et al., 2023).

Unlike platform theory, which assumes coordination among identifiable economic actors, ANG differs from platform theory in that it does not assume coordination among identifiable human or firm actors; instead, international expansion decisions and actions may be computationally generated and executed without identifiable human initiating agents.

ANG differs fundamentally from platform theory in that platforms coordinate actors, whereas ANG introduces computational systems that generate and execute cross-border actions without requiring actor coordination.

CPAI is the central explanatory mechanism of ANG, defined as the capacity of AI systems to simulate, evaluate, and partially execute international expansion decisions prior to organizational resource commitment.

### **3. Computational Pre-Adaptive Intelligence (CPAI) Architecture of ANG**

#### **3.1 Layer 1: Formal Definition Layer**

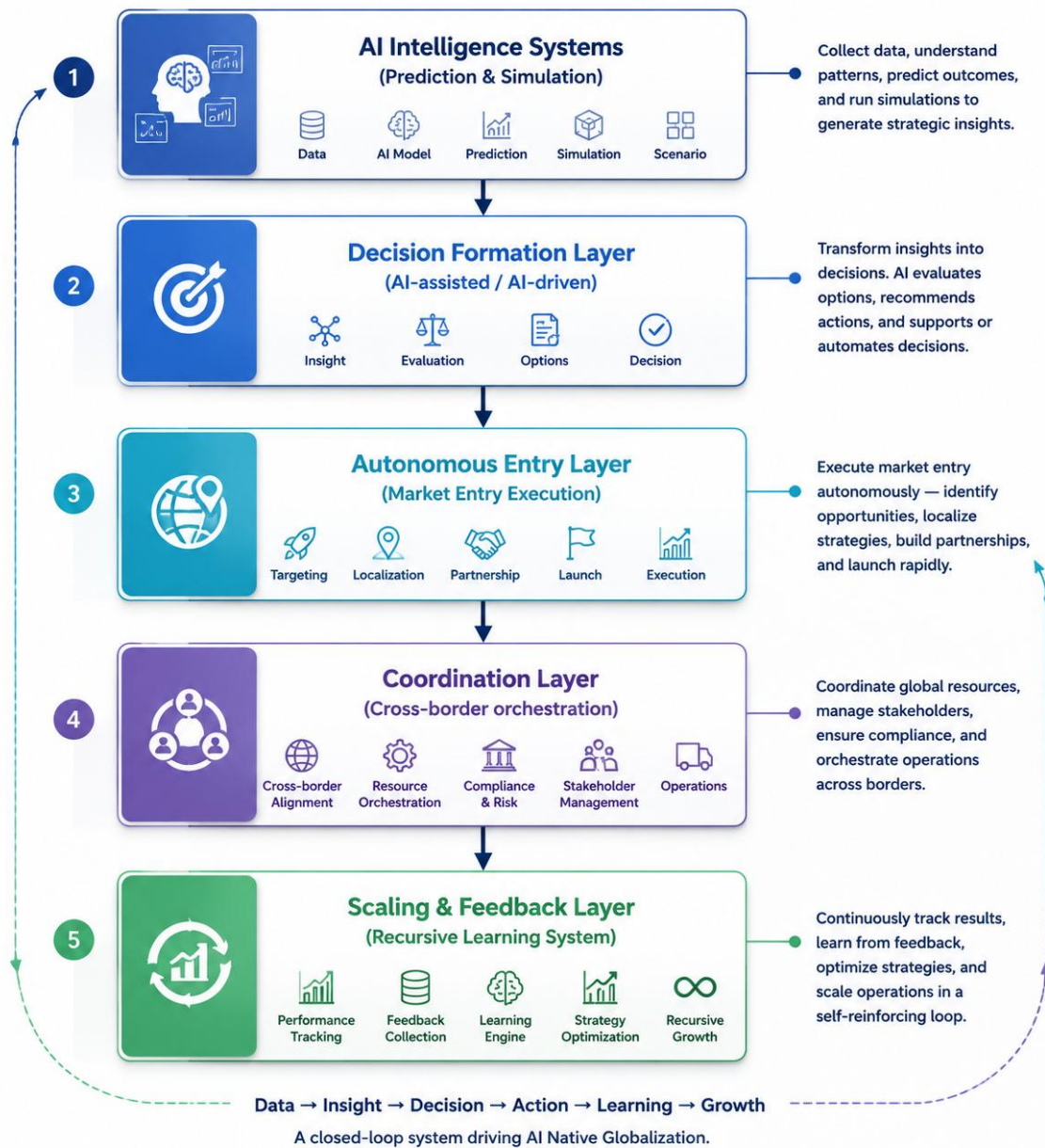
AI Native Globalization (ANG) is defined as a paradigm of international expansion in which artificial intelligence systems and autonomous agents become primary operational drivers of cross-border market entry, coordination, and competitive positioning, thereby reshaping traditional asset-centric globalization models.

#### **3.2 Layer 2: Analytical Expansion Layer**

The analytical layer describes how artificial intelligence, autonomous agents, knowledge systems, and digital cognition interact to influence international expansion processes.

These processes form a recursive adaptive system in which AI-driven decisions are continuously updated through environmental feedback loops.

#### **Figure 1. ANG Mechanism Model**



This loop captures a transition from experiential learning (Johanson & Vahlne, 1977) to simulation-based adaptive learning enabled by artificial intelligence systems. It operationalizes CPAI by recursively feeding market signals into decision simulations, enabling pre-adaptive strategy formation.

Figure 1 illustrates the sequential architecture of AI Native Globalization. The process begins with AI intelligence systems that generate predictive insights and simulate market conditions. These outputs inform decision formation processes, where AI systems either assist or directly participate in strategic internationalization decisions.

Subsequently, autonomous agents may execute selected components of market entry, including localization adjustments, pricing strategies, and coordination with platform ecosystems. This is followed by a coordination layer in which AI systems facilitate cross-border alignment between distributed organizational units.

Finally, a recursive feedback layer integrates real-time market data into the system, allowing continuous adaptation of decision models and operational strategies. This loop structure distinguishes ANG from traditional linear models of international expansion by introducing continuous system-level learning.

#### **4. Theoretical Propositions**

All propositions are derived from the logic of Computational Pre-Adaptive Intelligence (CPAI) as the core mechanism underlying AI Native Globalization.

The propositions are organized across three levels: initiation mechanisms, governance reconfiguration, and system-level feedback dynamics.

P1: International expansion processes in AI Native Globalization contexts are increasingly initiated through computational intelligence systems prior to organizational resource commitment, as algorithmic systems can generate, evaluate, and simulate entry opportunities independently of managerial initiation.

In such cases, computational systems do not merely recommend entry decisions but directly allocate digital resources (e.g., cloud infrastructure, programmatic spending budgets) under predefined governance constraints.

P2: Autonomous agents redistribute decision-making authority in cross-border coordination processes, reducing the centrality of human managerial control.

P3: Digital coordination infrastructures enable decoupling of international expansion processes from physical asset deployment constraints.

P4: AI-driven globalization processes operate as recursive adaptive systems in which market feedback continuously reshapes computational decision architectures.

All propositions are grounded in computational pre-adaptive intelligence as the core construct.

The propositions are structured around Computational Pre-Adaptive Intelligence (CPAI) as the core mechanism of ANG.

## 5. Discussion

ANG suggests a structural shift in globalization logic from organization-led expansion to intelligence-mediated expansion. This implies a transition toward system-centric globalization in which computational intelligence plays a structuring role in international strategy formation.

## 6. Boundary Conditions

ANG may be constrained under several boundary conditions. First, in highly regulated industries or sovereign digital ecosystems, AI autonomy may be limited. Second, in contexts with fragmented or low-quality data, AI decision systems may lose effectiveness. Third, geopolitical restrictions on digital infrastructure may limit scalability.

These conditions suggest that ANG operates most effectively in data-rich, digitally open, and institutionally flexible environments.

CPAI-based internationalization fails under environments with high uncertainty irreducibility, where simulation cannot approximate market dynamics (e.g., institutional discontinuities or regime shifts).

## 7. Micro Mechanisms

Autonomous agents influence international expansion through task-level decision delegation. For example, AI systems can evaluate market attractiveness, simulate pricing strategies, and recommend or execute entry timing decisions. This leads to a partial redistribution of decision authority, where human actors shift toward supervisory roles.

In some emerging AI-native configurations, autonomous agents may also execute low-cost and reversible international actions without ex-ante human approval, such as programmatic advertising deployment, dynamic cloud infrastructure allocation, or algorithmically triggered cross-border A/B market testing. These actions represent a shift in the threshold of organizational commitment, where initial international exposure can occur before formal managerial authorization.

However, rather than fully replacing human decision-making, AI systems operate within a constrained autonomy spectrum, where the degree of independence varies across task complexity, reversibility, and financial exposure.

This creates a hybrid governance structure in which AI systems dominate low-risk exploratory actions, while humans retain control over irreversible high-commitment strategic decisions.

## 8. Implications and Contributions

ANG contributes to international business theory in three ways:

First, it reconceptualizes internationalization as a pre-adaptive simulation process rather than an experiential learning process.

Second, it relocates decision authority from managerial cognition to computational simulation systems.

Third, it introduces Computational Pre-Adaptive Intelligence (CPAI) as a theoretical primitive explaining how international expansion is generated, evaluated, and partially executed prior to organizational commitment.

## 9. Conclusion

This paper presents AI Native Globalization (ANG) as a dual-layer conceptual framework for understanding AI-driven changes in international expansion. By separating a formal definition layer from an analytical expansion layer, the framework provides both conceptual clarity and theoretical flexibility for future research.

ANG reconceptualizes internationalization as a computationally simulated process of global action generation, rather than a gradual process of experiential accumulation.

While this framework is conceptual in nature, it provides a structured foundation for future empirical research on AI-mediated international expansion processes.

ANG is structured around Computational Pre-Adaptive Intelligence (CPAI) as its core theoretical primitive, redefining internationalization as simulation-before-action rather than learning-by-experience.

The central explanatory construct of ANG — computational pre-adaptive intelligence — provides a theoretical primitive for rethinking internationalization under conditions of algorithmic agency. Future research may operationalize CPAI through measures of simulation capacity, autonomy scope, and feedback integration speed.

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