Software Components and Product Variety in a Platform Ecosystem: A Dynamic Network Analysis of WordPress

How do internal and external APIs shape the variety of products in a digital platform, and what happens to these effects as the platform ecosystem grows over time?

Platforms like WordPress rely on APIs to let developers build different kinds of products. But until now, it has not been clear exactly how APIs influence the range and variety of products that get made. Wattal and colleagues look at plug-in data from WordPress between 2004 and 2014 to study this relationship.

They find that APIs are organized into three layers. The complete core is made up of APIs that are essential to running the platform. The regular core contains APIs that many developers use to create new products, and the periphery includes APIs that are used less often for more specialized features. Their results show that external APIs in the regular core are very important for encouraging product variety. Developers use these APIs to mix different functions and create new types of plug-ins.

However, when new product categories are just starting out, developers often copy existing designs rather than trying something new. Because of this, the positive effect of external APIs on innovation is smaller at first.

The study challenges older ideas about platform structure, showing that ecosystems do not just follow a simple core-periphery model. Instead, they become more layered and complex as they grow. The findings suggest that platform owners need to carefully manage APIs to encourage innovation while keeping the ecosystem stable.

MAJOR TAKEAWAYS:

● External APIs help create new products because developers use them to combine features in creative ways.
● New product categories slow innovation at first because developers tend to copy existing designs before trying new ideas.
● Platform structures grow more complex over time as ecosystems move beyond simple core-periphery models when they mature.

WHO NEEDS TO KNOW:

● Platform Developers
● Policy Makers
● Academics

CONTACT US:

● Sunil Wattal, Professor, Management Information System
sunil.wattal@temple.edu
● Software Components and Product Variety in a Platform Ecosystem: A Dynamic Network Analysis of WordPress

Fox School of Business

Learn more about the Translational Research Center
fox.temple.edu/trc