



International Telecommunication Union

Identity Convergence for NGN Platform and Business

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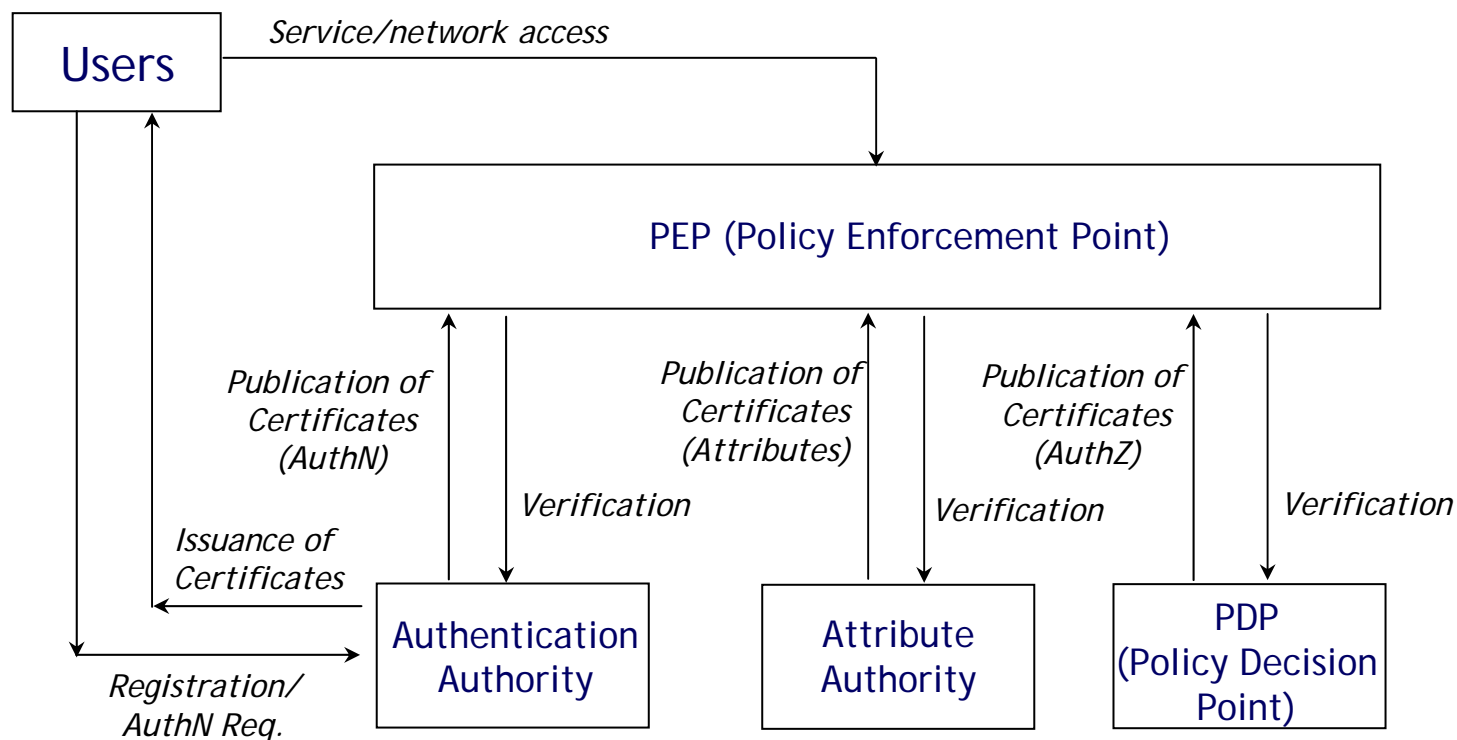
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Outline

- Existing IdM Framework on the Internet
- IdM Framework for NGN
- Identity Fragmentation
- IdM Requirements for NGN
- Identity Convergence
- Technologies for Identity Convergence
 - Group Signature
 - Context Obfuscation
 - Privacy Policy Negotiation
- NGN Business based on IdM
- Summary

Existing IdM Framework on the Internet

- o SAML models roles of entities and interactions between them

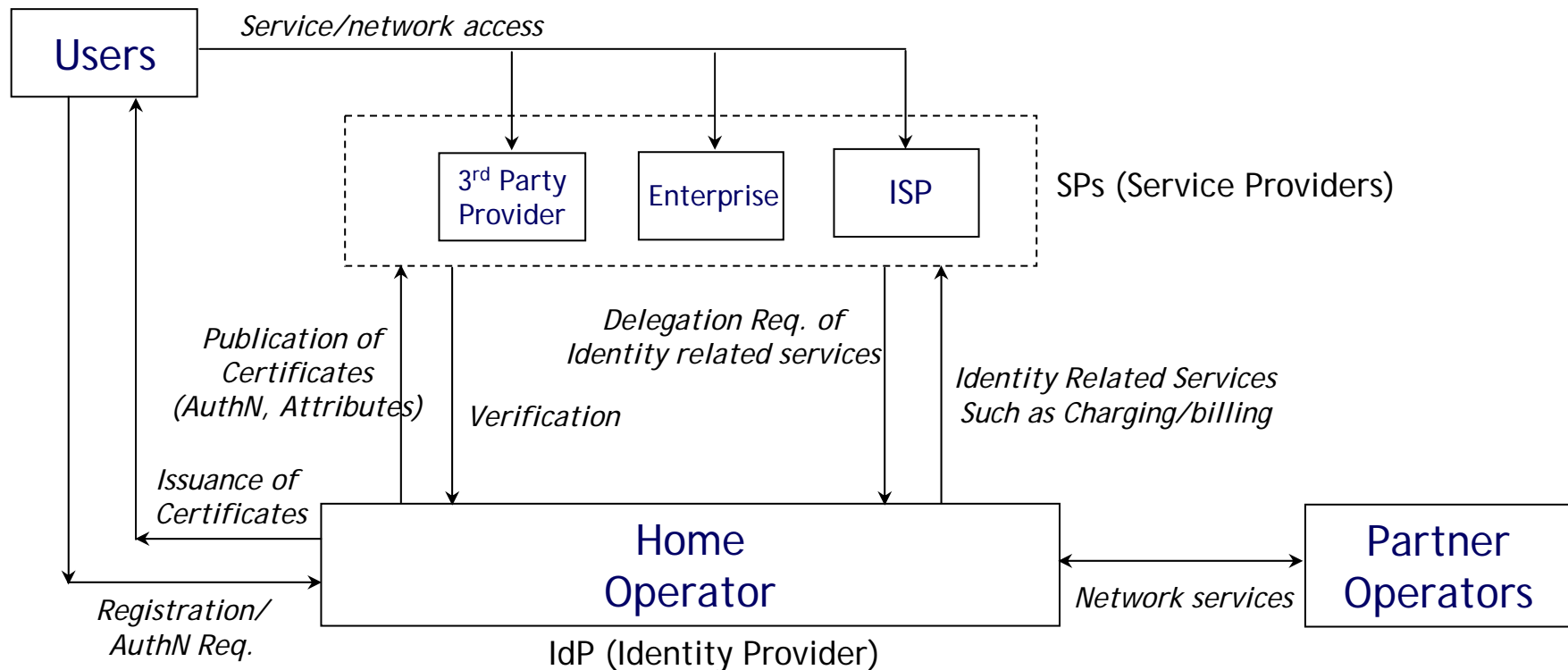




IdM Framework for NGN

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- Home operator publishes interfaces for service/network access with SPs and partner operators.
- SPs (3rd party providers, enterprises, & ISPs) provide IT/network services with users.
- Operators provide network services in a cooperative manner.

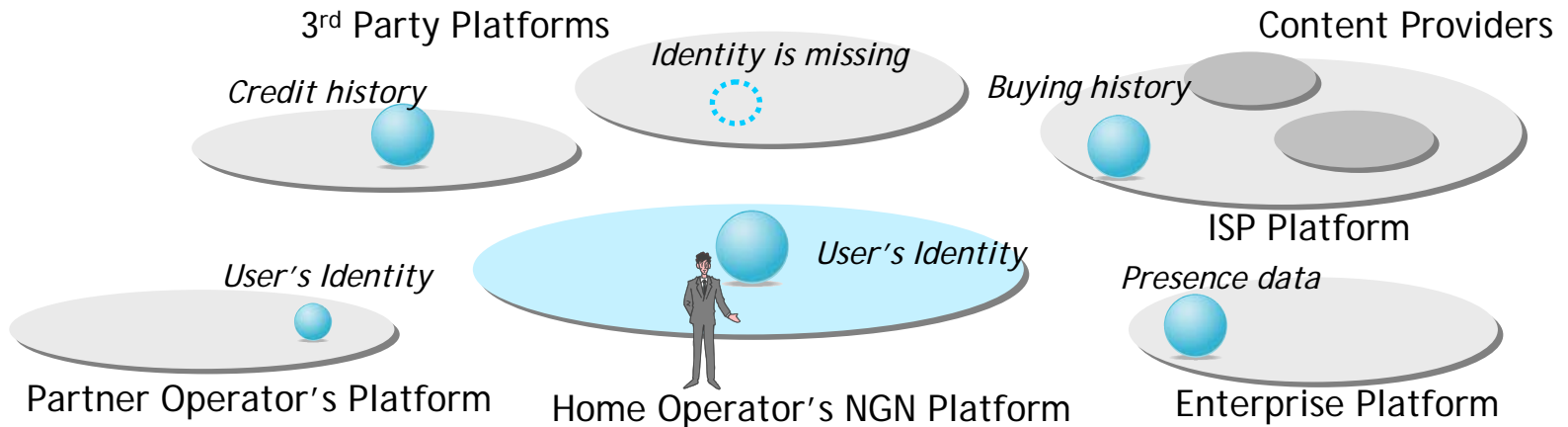




Identity Fragmentation

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- So far, identity info of a user is distributed & duplicated among different platforms, therefore
 - There is need to have multiple sign-on procedures for a wide range of services.
 - It is difficult to make good use of user's identity info (trail, presence, geo-location) across different platforms.
 - It is troublesome for users to provide, retrieve and update all privacy info managed at each platform separately.





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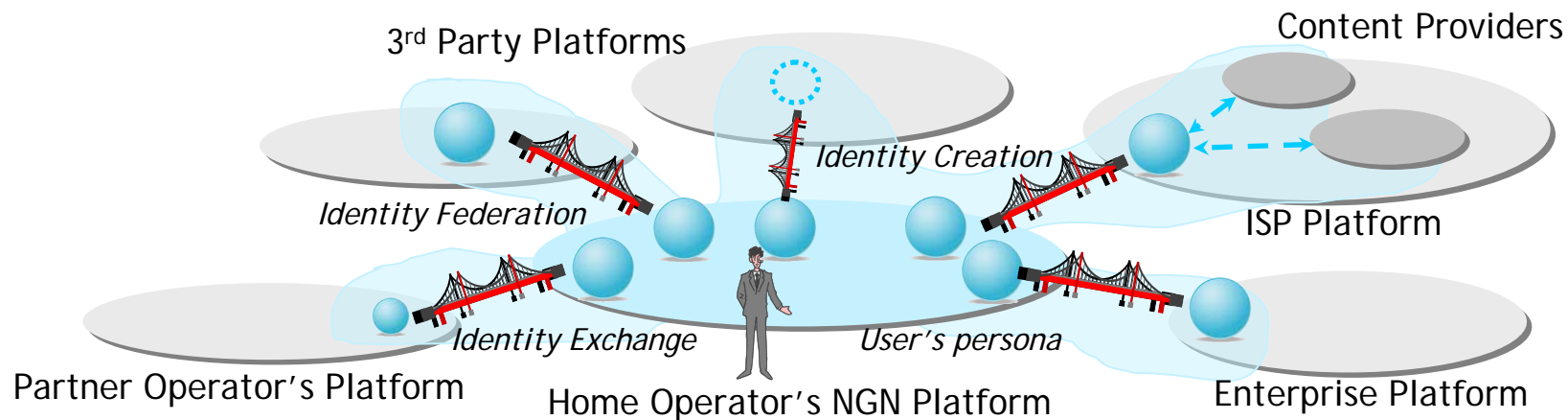
IdM Requirements for NGN

- Seamlessness
 - Consistent access to IT/network services at any platform without interruption
- Context-aware & Personalization
 - Personalized service utilizing users' context info managed by providers in various domains
- Privacy Protection
 - Management of users' personal attributes based on their policy, minimizing the risk of leakage

Identity Convergence

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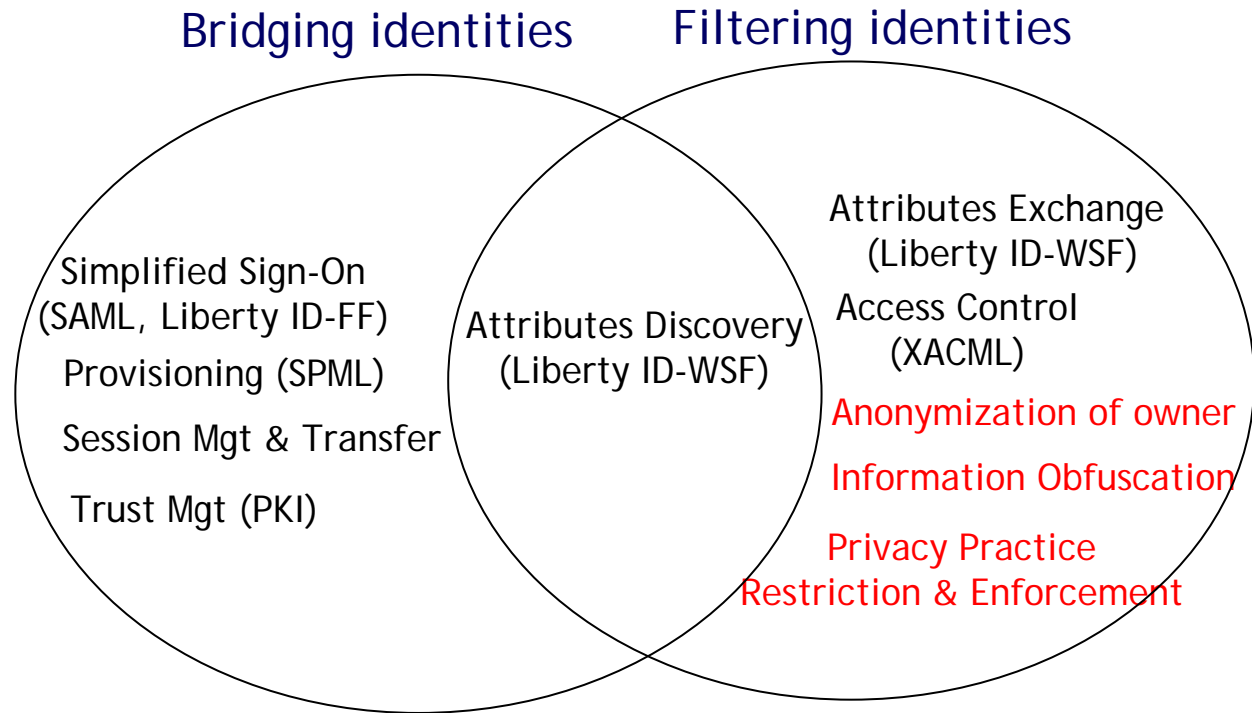
- o In order to solve identity fragmentation,
 - Build bridges between platforms
 - introduction of *multi-personas* per user
 - optimum deployment & life cycle mgt of personas
 - Filter identity info when crossing the bridges
 - minimization of identity info disclosure
 - obfuscation of identity info





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Technologies for Identity Convergence

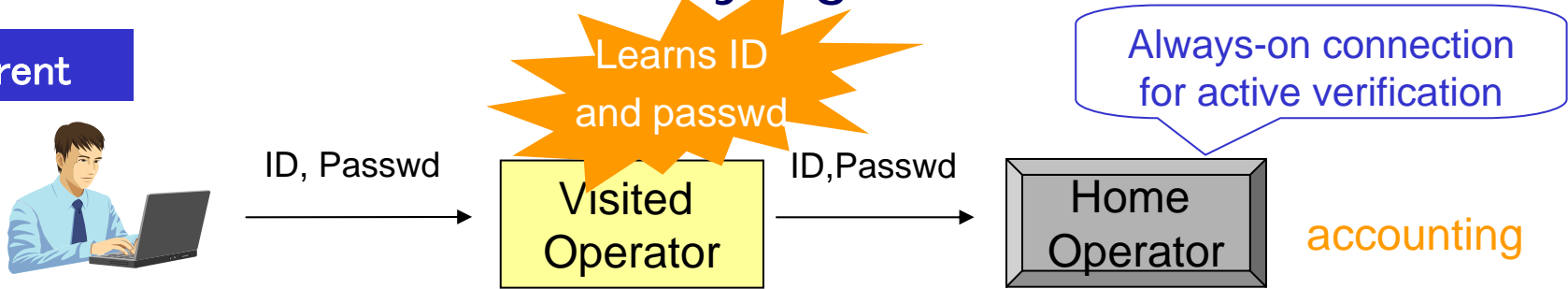


- Fundamental Technologies
- o Anonymization of owner
 - Blocks the owner info but passes authenticated group membership → Group Signature
 - o Information Obfuscation
 - Blocks exact context information but passes only obscured data → Context Obfuscation
 - o Privacy Practice Restriction & Enforcement
 - Negotiates type of filtering to be performed between sending & receiving platforms → Privacy Policy Negotiation

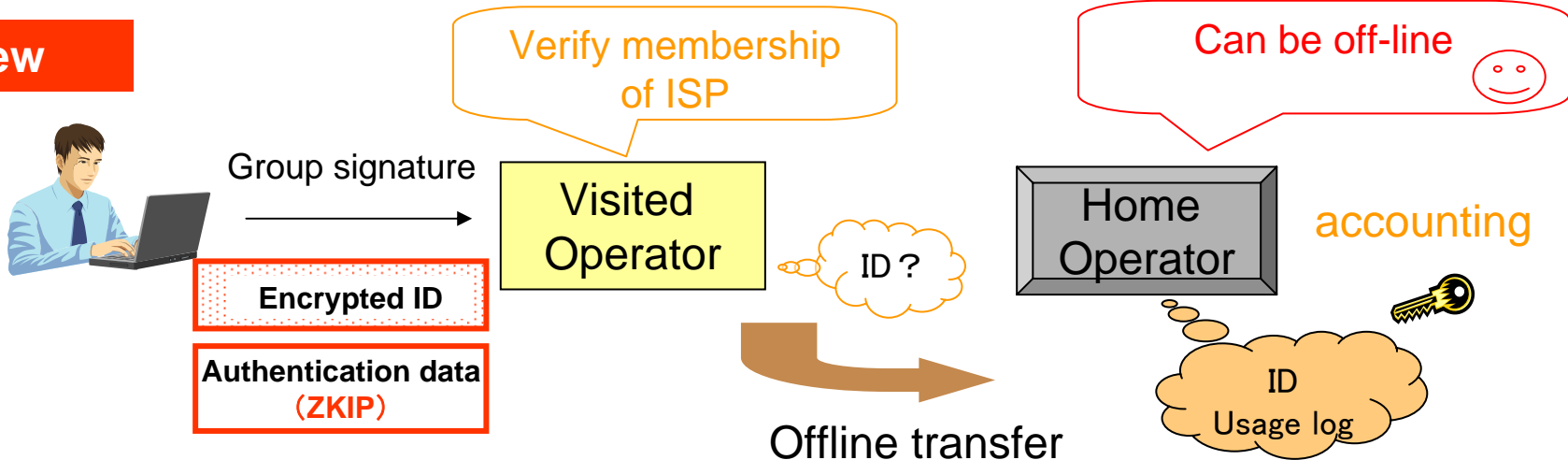
Group Signature

- o Authentication mechanism that allows a verifier to verify the group membership of a user without identifying the user.

Current

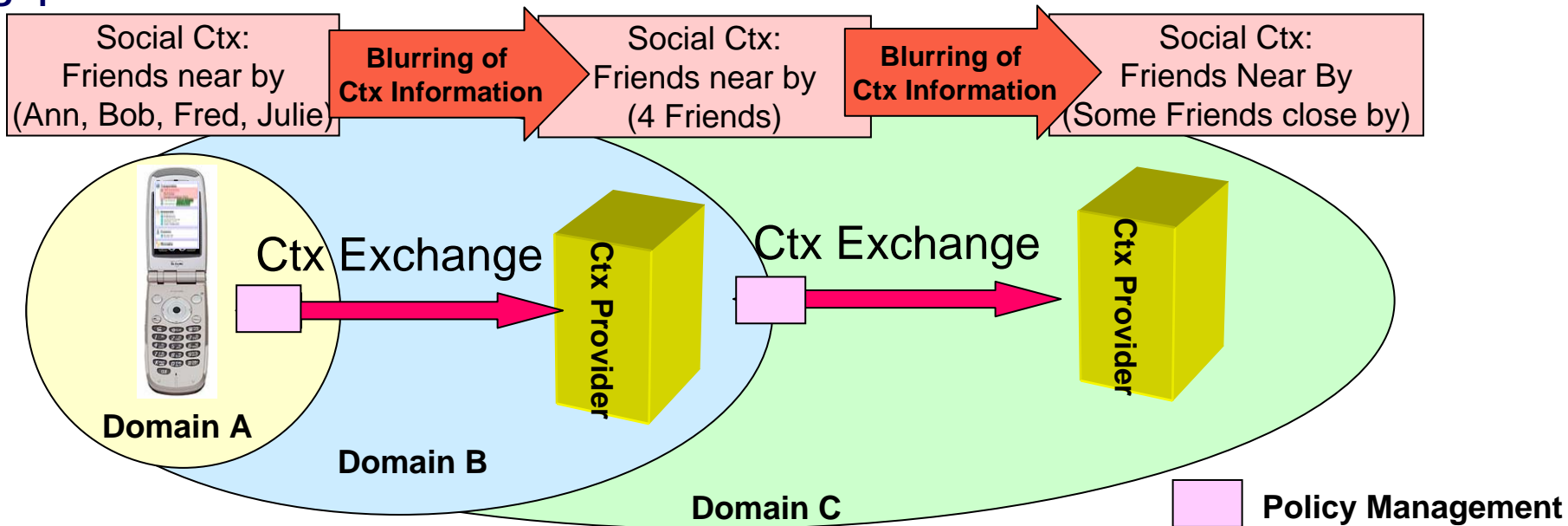


New



Context Obfuscation

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Context Obfuscation Technology

- supports privacy of context information based on user preferences
- handles context exchange within and across domains uniformly

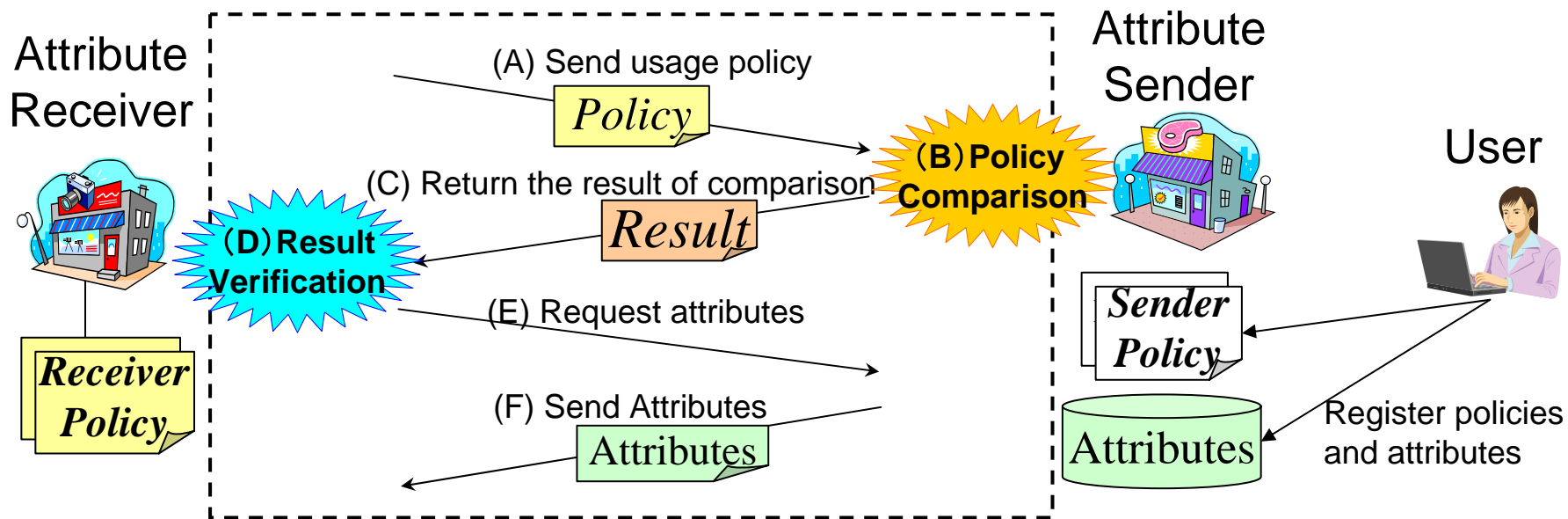
Context Obfuscation Challenges

- Context requires a structure that translates naturally to a blurring mechanism
- Semantics for context blurring need to be defined
- Adequate context distortion filters are required
- User interface must be simple and support decisions in a dynamic environment
- User must trust obfuscation behaviour

Privacy Policy Negotiation

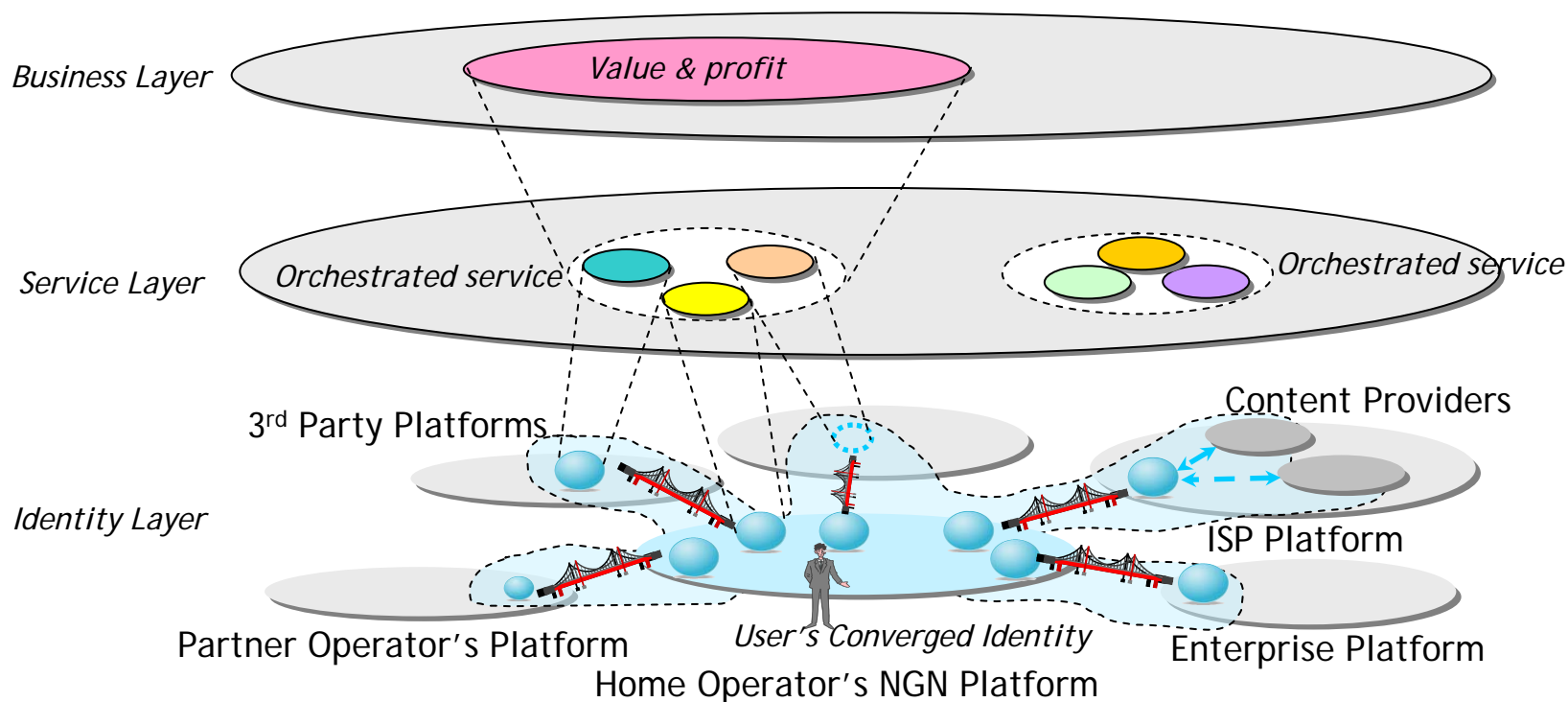
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- Privacy policy confirmation for attributes exchange
 - Types of personal attributes to be exchanged
 - Limited recipients and usage of the personal attributes
- Disclose the minimum set of attributes allowed by a user & providers
- Make a mutual agreement on accountability between a sender & receiver



NGN Business based on IdM

- Identity Convergence enables service orchestration, which bring about more value & profit than the sum of individual component services



Summary

- o Identity convergence concept enables the following properties of NGN services:
 - Seamless
 - Context-aware & personalized
 - Privacy protected
- o NEC will contribute to the standardization of identity management for NGN through the ITU-T.