IT2023 Lecture Diary (Nov 10, 2023)

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┌─────────────────────────────────────────┐
│          Application Systems            │
│                                         │
│  ┌──────────────┬────────────────────┐  │
│  │   Internet   │  Telecom Network   │  │
│  └──────────────┴────────────────────┘  │
└─────────────────────────────────────────┘
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(a) Web 1.0 ($\sim$ 1993)

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┌─────────────────────────────────────────┐
│          Application Systems            │
│                                         │
│  ┌───────────────────────────────────┐  │
│  │    Information Infrastructure     │  │
│  ├──────────────┬────────────────────┤  │
│  │   Internet   │  Telecom Network   │  │
│  └──────────────┴────────────────────┘  │
└─────────────────────────────────────────┘
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(b) Web 2.0 ($\sim$ 2006)

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┌─────────────────────────────────────────┐
│          Application Systems            │
│  ┌──────────────────┬────────────────┐  │
│  │ Intelligent Infra.│   Blockchain   │  │
│  ├───────────────────┴────────────────┤  │
│  │     Information Infrastructure     │  │
│  ├──────────────┬─────────────────────┤  │
│  │   Internet   │   Telecom Network   │  │
│  └──────────────┴─────────────────────┘  │
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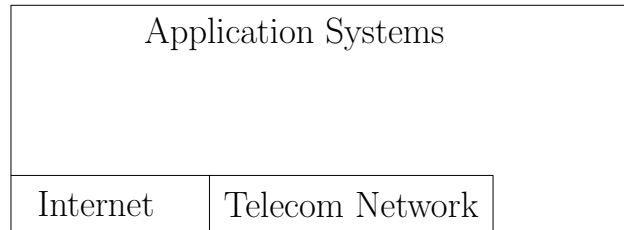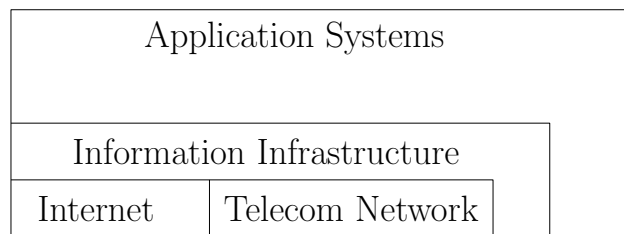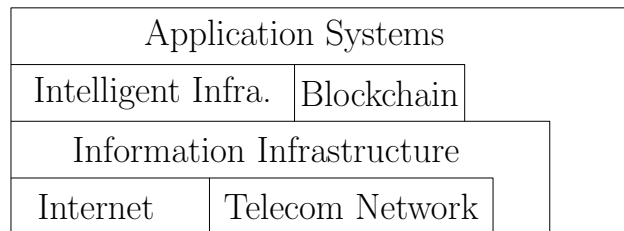
(c) Web 3.0 ($\sim$ 2020)

Figure 1: Evolution of the four-layer stack for today application systems which are developed with the support of intelligent infrastructure, blockchain and information infrastructure. Note that an application system can be developed and deployed even without relying on the services from the information infrastructure, the intelligent infrastructure, the intelligent infrastructure or any blockchain.
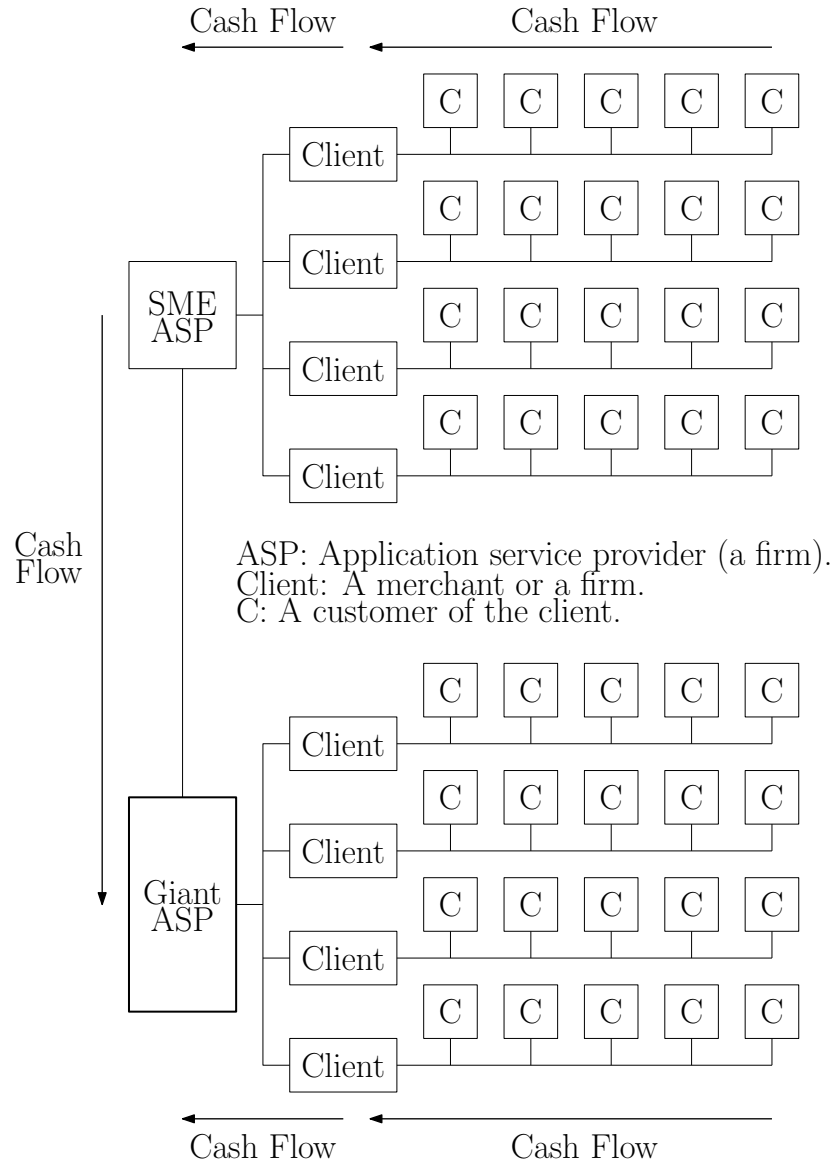
Figure 2: Typical (a) cash flow and (b) service flow in the 1990s application service provider (ASP) ecosystem. Application services included (i) memory space for data and file storage, (ii) application systems for administration (including documentation, accounting, finance and HR), (iii) supply chain management (SCM) systems, (iv) customer relationship management (CRM) systems, (v) competitive intelligent systems and others. Clearly, giant ASPs, like SAP and IBM, played important roles in this service supply chain.
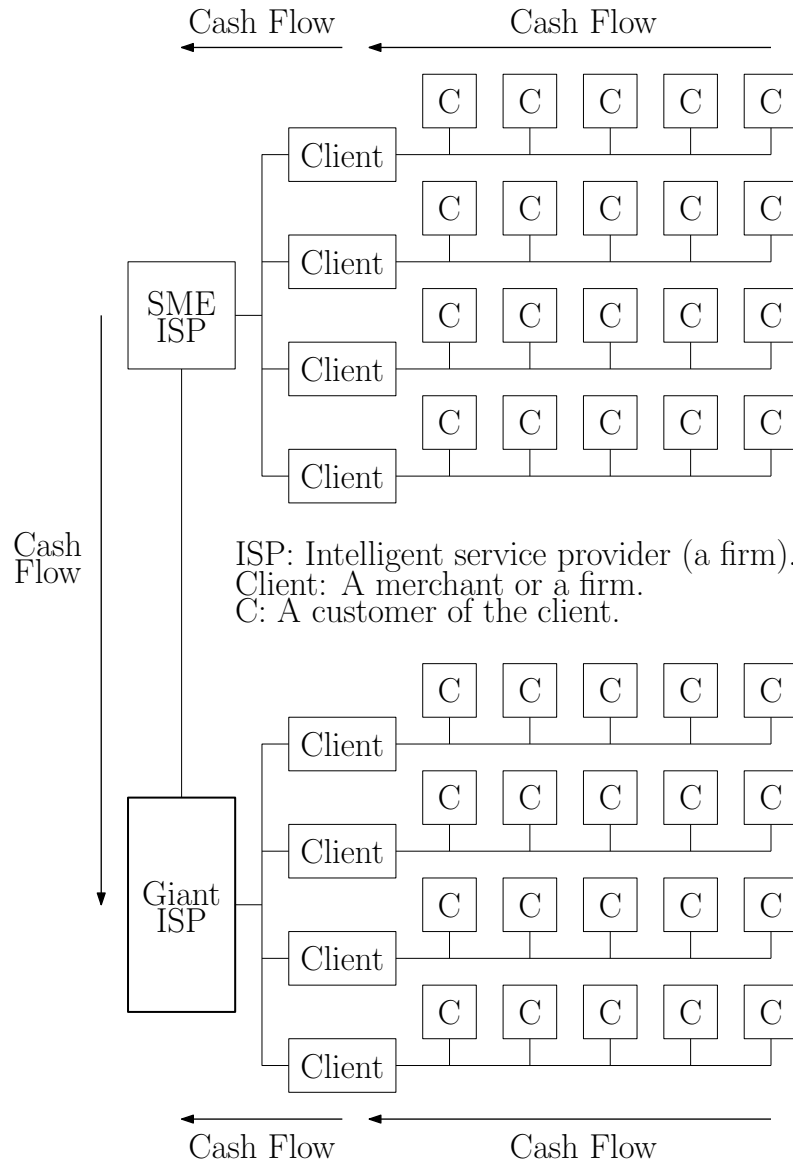
Cash Flow   Cash Flow

C   C   C   C   C

Client

C   C   C   C   C

Client

SME
ISP

C   C   C   C   C

Client

C   C   C   C   C

Client

Cash
Flow

ISP: Intelligent service provider (a firm).
Client: A merchant or a firm.
C: A customer of the client.

C   C   C   C   C

Client

C   C   C   C   C

Client

Giant
ISP

C   C   C   C   C

Client

C   C   C   C   C

Client

Cash Flow   Cash Flow

Figure 3: Typical (a) cash flow and (b) service flow in an intelligent service provider (ISP) ecosystem. Intelligent services included (i) memory space for data and file storage from the cloud, (ii) the intelligent services supported by the generative AI models and (iii) the intelligent services supported by other AI models. Giant ISPs, like Google and Microsoft, play important roles in this service supply chain.
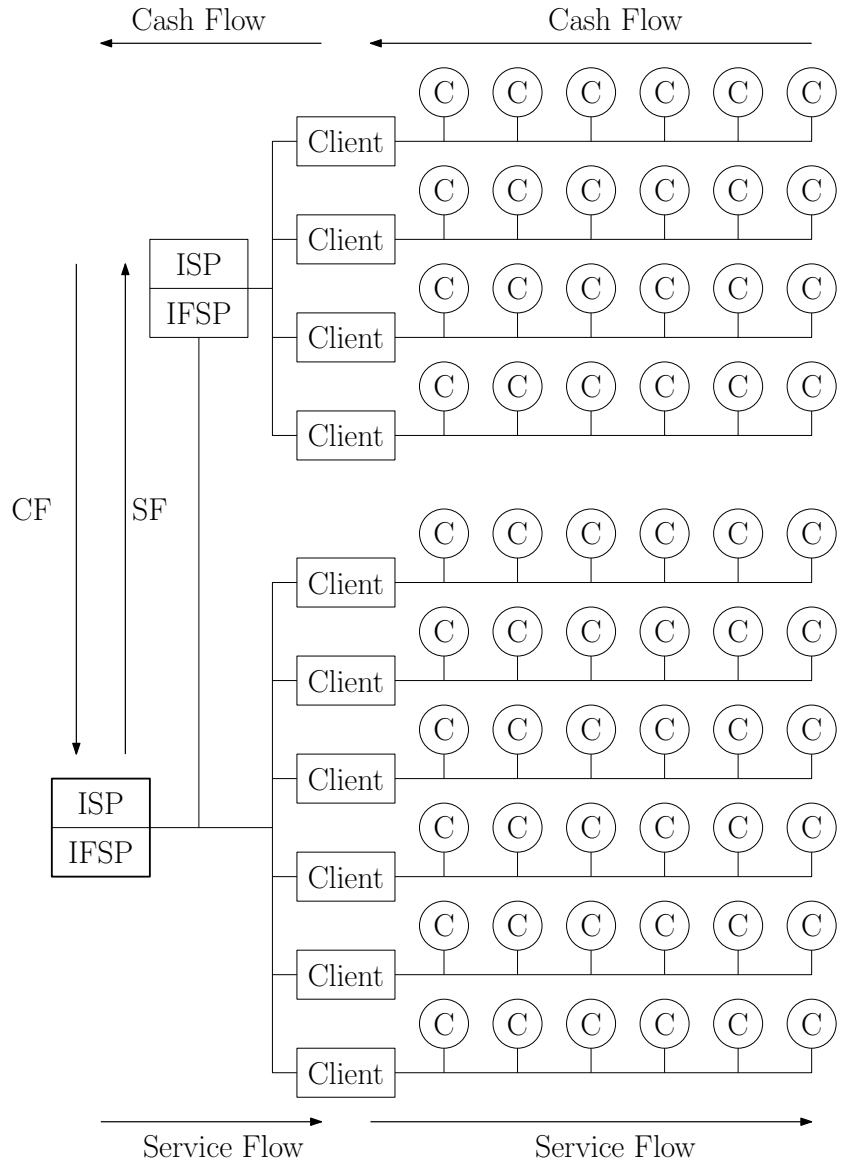
Figure 4: Typical *intelligent service supply chain*, in which the end users are *customers*. Similar to that of the service supply chains manifested in the ASP network and ISP network, the giant intelligent service provider (ISP) and the information infrastructure provider (IFSP) play key roles in the chain. As today intelligent service like ChatGPT requires to use a large amount of computational resource, many intelligent services have to be delivered based on a cloud platform. In this regard, many ISP and IFSP are indeed the same provider, like Google and Microsoft. They provide information infrastructures via their clouds. On their clouds, intelligent services are delivered as application softwares or simply APPs for the clients. If an client is a merchant, an customer of the merchant is able to get service support via the intelligent services together with the customer service provided by the merchant.
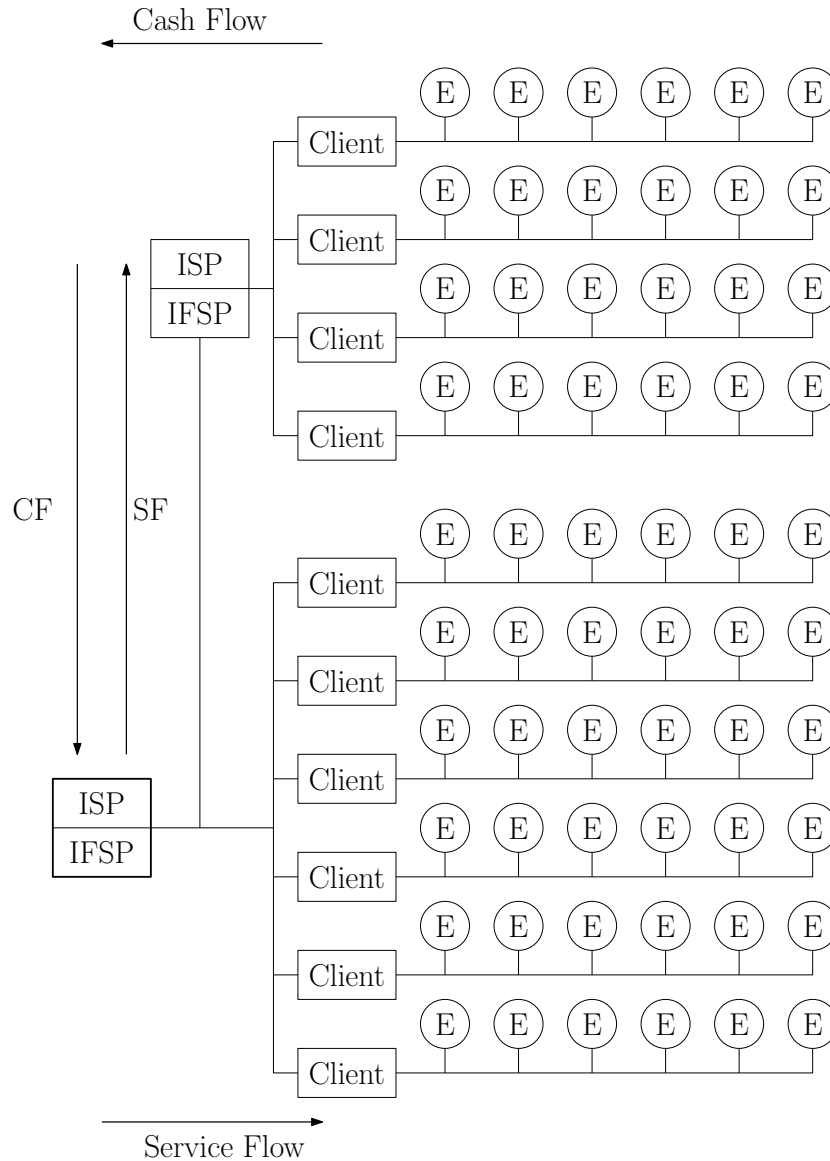
Figure 5: Typical *intelligent service supply chain*, in which the end users are *employees*. The giant intelligent service provider (ISP) and the information infrastructure provider (IFSP) play key roles in the chain. As today intelligent service like ChatGPT requires to use a large amount of computational resource, many intelligent services have to be delivered based on a cloud platform. In this regard, many ISP and IFSP are indeed the same provider, like Google and Microsoft. They provide information infrastructures via their clouds. On their clouds, intelligent services are delivered as application softwares or simply APPs for the employees in the clients.