SST 38 – Flow

A large railway station handles thousands of passengers every day. Trains arrive from different directions, passengers transfer between services, information is communicated through displays and announcements, and staff coordinate activities to keep everything running smoothly.

Most passengers pay little attention to these processes when everything is working well. They simply move from one place to another and arrive at their destination.

However, imagine what happens when communication systems fail. Information boards stop working. Announcements become unreliable. Staff receive conflicting information. Passengers become confused. Trains are delayed. Crowds begin to form.

The trains still exist. The tracks still exist. The passengers still exist. Yet the effectiveness of the entire system rapidly declines because the flow of information and coordination has been disrupted.

The problem is not necessarily a lack of resources. Instead, it is a failure in the movement of information, decisions, and coordination throughout the system.

The same principle applies to organisations, businesses, governments, and societies. Systems depend not only upon the resources they possess but also upon their ability to move information, resources, authority, and decisions between different parts of the system.

This capacity is known as Flow.

Formal Description

Flow refers to the capacity of a system to coordinate and exchange matter, energy, information, resources, authority, and other transfers necessary for effective functioning.

Every system depends upon transfers between its components. High-flow systems exhibit efficient coordination, low friction, and effective communication. Low-flow systems experience delays, bottlenecks, mistrust, fragmentation, and coordination failures.

Plain English Explanation

Many problems in social systems arise not because resources are missing but because those resources are not moving effectively through the system.

Consider a company with talented employees, modern equipment, and adequate funding. If departments fail to communicate, information is delayed, decisions become trapped in bureaucracy, or teams work at cross purposes, performance may still be poor despite the availability of resources.

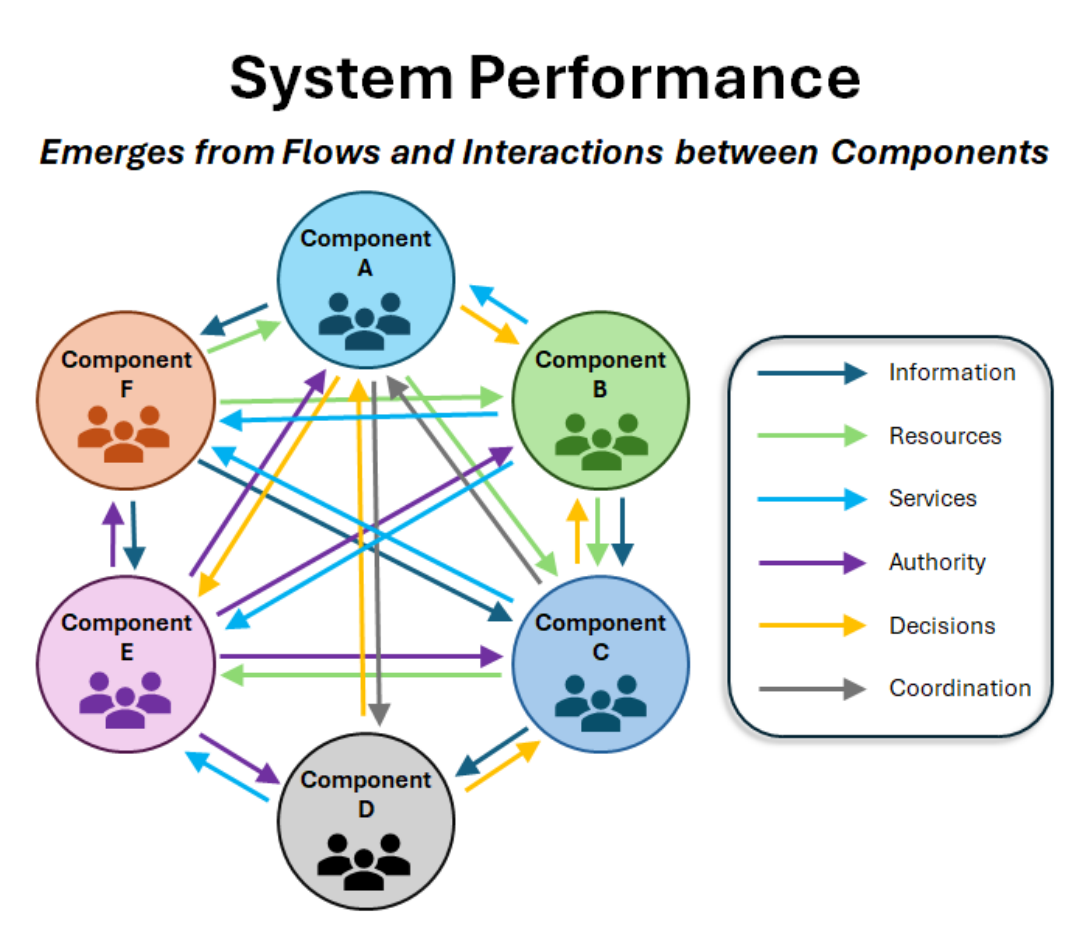
Flow concerns the movement and transfer of things that systems need in order to function. These may include information, money, materials, authority, decisions, knowledge, services, or people.

When flow is effective, coordination becomes easier. People understand what is happening, resources arrive where they are needed, decisions are made in a timely manner, and activities support one another.

When flow becomes restricted, friction develops. Delays increase. Communication breaks down. Trust may decline. Effort is wasted. Different parts of the system become disconnected from one another.

Flow is therefore closely related to cooperation and coordination. Highly effective systems often achieve impressive results not because they possess extraordinary resources but because they move existing resources efficiently and intelligently.

For this reason, problems affecting flow often provide an early warning sign that wider difficulties may be developing elsewhere in the system.



Example 1 – An Organisation

A company possesses skilled staff and adequate funding, but departments rarely communicate with one another. Information is duplicated, projects are delayed, and misunderstandings are common. The organisation's difficulties arise largely from poor flow rather than a lack of resources.

Example 2 – A Public Service

A hospital employs highly qualified doctors and nurses. However, fragmented information systems and poor communication between departments create delays, inefficiencies, and frustration. Flow problems reduce overall effectiveness.

Example 3 – A Nation

A country may possess substantial wealth and productive capacity. Yet poor infrastructure, bureaucratic delays, weak communication, or low trust can impede the movement of goods, information, and decisions throughout society, reducing overall performance.

Provenance and Links

The importance of flows appears throughout systems theory, cybernetics, economics, and network science. Jay Forrester emphasised flows and feedback within System Dynamics. Stafford Beer highlighted information flows within viable systems. Economists have long studied the movement of goods, services, money, and information throughout economic systems.

Within the Systemic Diagnostics framework, Flow represents one of the four primary viability dimensions. It focuses attention on the effectiveness of transfers and coordination throughout the system. The concept also builds upon the broader systems-theoretical view that system behaviour emerges from patterns of interaction and exchange between components.

Practical Exercise

Choose an organisation, business, public service, or community that you know reasonably well.

1. Identify three important flows within the system.
2. What information, resources, or decisions move through these flows?
3. Identify one bottleneck or coordination problem that could disrupt each flow.
4. How might improving these flows increase overall system performance?