



Says

What have we heard them say?  
What can we imagine them saying?



Thinks

What are their wants, needs, hopes, and dreams?  
What other thoughts might influence their behavior?

We analyze the global structure of the world-wide air transportation network, a critical infrastructure with an enormous impact on local, national, and international economies

In a small-world network, pairs of nodes are connected by short paths as one expects for a random graph

During the period considered, there are 531,574 unique non-stop passenger flights, or flight segments, operating between 3883 distinct cities.

The world-wide air transportation network is responsible for the mobility of millions of people every day. Almost 700 million passengers fly each year, maintaining the air transportation system ever so close to the brink of failure

In the air transportation network, the average shortest path length  $d$  is the average minimum number of flights that one needs to take to get from any city to any other city in the world

The farthest cities in the network are Mount Pleasant, in the Falkland Islands, and Wasu, in Papua New Guinea

THE GLOBAL AIR TRANSPORTATION NETWORK WITH TABLEAU

From Mount Pleasant, one can fly to Punta Arenas, in Chile, and from there to some hubs in Latin America

To gain greater insight into the structure and evolution of the air transportation network, we calculate the degree distribution of the cities.

The degree of a node is a source of information on its importance. However, the degree does not provide complete information on the role of the node in the network

Another fundamental aspect in which real-world networks often deviate from the random graphs typically considered in mathematical analysis

Nodes with small degree and large centrality can be regarded as anomalies. Other complex networks that have been described in the literature, like the Internet

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Does

What behavior have we observed?  
What can we imagine them doing?



Feels

What are their fears, frustrations, and anxieties?  
What other feelings might influence their behavior?

See an example