



SAID BUSINESS SCHOOL, University of Oxford

SEMINAR SERIES / HILARY 2011

Convenors: Felix Reed-Tsochas, Institute for Science, Innovation and Society,
Saïd Business School
Eduardo López, Saïd Business School

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Seminar webpage:
www.cabdyn.ox.ac.uk/complexity_seminars.asp

Sandwiches and drinks will be provided

Please note: although the seminar programme detailed was correct at time of printing, seminar arrangements are subject to change - for the latest information, please check the seminar webpage.

Tuesday 25th January
(12.30pm - 2.00pm) James Martin Seminar Room

Dr Alexandra Brintrup

Senior Research Fellow in Complex Networks, CABDyN Complexity Centre, Saïd Business School

'The Shape of the Toyota Supply Network: Reflections on Resilience'

ABSTRACT

Using large scale empirical data we examine the Toyota supply network from a topological standpoint and discuss aspects relating to its resilience. Resilience here includes the ability to handle both top-down, i.e. demand uncertainty, and bottom-up, i.e. supply disruption. Our preliminary findings verify the long standing suspicion that the Toyota supply chain shows complex network characteristics. This structure in turn gives rise to significant lateral dependencies. The network responds to such potential vulnerabilities with its "small-world" structure where the average path to any given supplier via other suppliers is very low, and the number of relations between suppliers that produce same product types is high, especially within the Kyoho-kai supplier association. We also present a discussion on topological support for supply chain strategy. The study is unique in supply chain management in its use of large scale empirical data and has wide ranging implications in re-examining complex supply chains from a network theoretic perspective.

