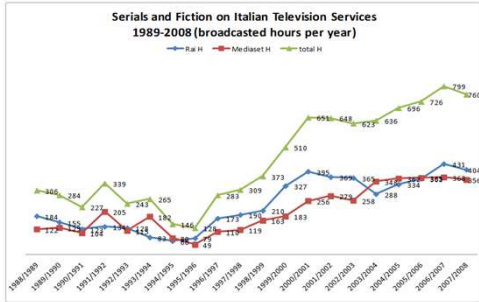


# NetSciX2016 – Poster Session #75 - Data-based study on complex systems

## Francesca Odella (Unitn, IT) - Methodological and theoretical issues in longitudinal social networks: analysis and examples of multiple inter-organizational relations

Examples from of a research work with complex networks: data refer to the production of media artefacts → **TV Fictions** in the period of fifteen years (1996 to 2009) when the organization of the TV broadcasting sector in Italy was undergoing a relevant structural change.

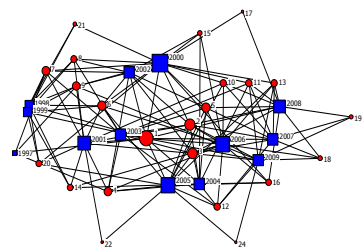


→ **Why TV Fictions?** Fiction is a popular media characterized by an opportunistic selection of thematic issues (biographies, social problems, historical events, ..) inside different types of TV broadcasting formats (TV movies, daily fiction, episodes, sit-com).

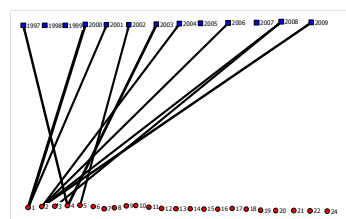
- It is a type of media production that in Italy raised in the seventies with state TV products and flourished in the nineties with the juxtaposition between state and private TV sectors (RAI vs Mediaset).
- Fiction production is a relevant cultural industry (economic and social aspects) and can have a role of cultural mediation and socialization.
- Fiction production is dependent on share of public and marketing strategies or cultural guidelines ('educational' role of TV programs, political ideas).
- Fiction production is 'country specific' and till recent years only few products had an international market (e.g. TV formats).

### Analysis of relations among producers through time

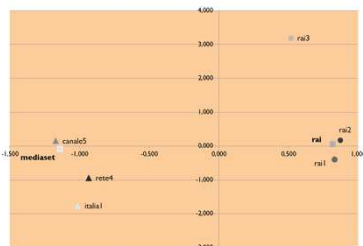
Each TV channel selects its preferred production companies and hence the professionals involved in each production → **few multiple relations.**



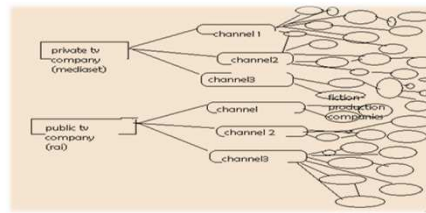
The distribution of production for the Top twenty producers of TV Fiction.



**Indirect relations** emerge from links between professionals (such as soundtrack composers and directors) or among fiction production companies (synergies). When multiple relations are distributed in time the issue of **sequencing** becomes relevant, as the time slot of production is different for the TV sector than in the film industry and changes due to **selection of partners** have to be separated from other effects.



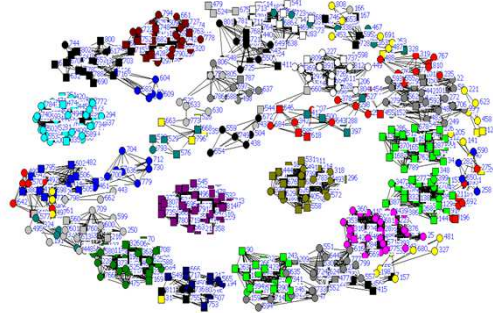
MCA plotting of TV broadcasting companies and main TV channels based on preferences about Italian producers. Data on 814 observations, var 61,1%:



**Data source:** OFI archives of Italian Fiction Production (1996-2009) with a total of 814 records (a TV media product: film, serial, sit-com). Various Information are provided for each record (production company, broadcasting (share, timeslot), directors, screenwriters, composers (music), subject, international collaborations and actors.

Data referring to a single broadcasting season can generate multiple networks representing

- direct relations like **power and functional relations** between TV channels and Fiction producers
- collaborative relations** (directors, screenwriters and music composers,..);
- **indirect relations** ex. association between type of Fiction subject and TV broadcasting channel.



Fiction products (1996-2009) as nodes ( ID= 1 to 814). Different colours/shape for production companies.

Data about fiction production can be interpreted as **complex/ multiple networks** characterized by **multiple relations:**

- each node (it can be either the fiction product itself, or the producer or the TV channel) can have relations with nodes that 'belong' to its own group of reference (or set),
- but also has relations with nodes that 'belong' to a different group (2-mode network);
- moreover, in the case of longitudinal data each node can be part of a chain of relations affiliation or generate multiple layers of association (ex. production company).

Network studies pay quite attention to structure of cultural industries (innovation, collaborative relations, creativity and mass production). Specific attention however, has been given to cinematographic or music industry, less to fiction production, characterized by serialization.

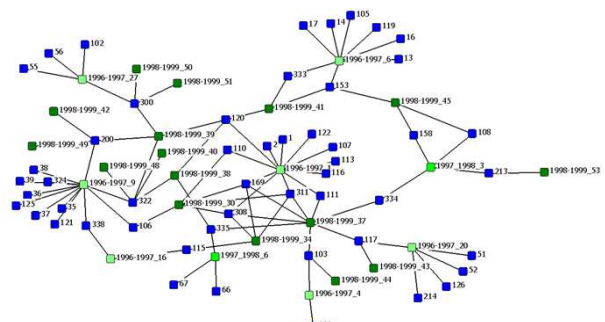
This poster concentrates on exploring two types of relations and specifically when production companies associate in order to reach better market results but also for strategic reasons:

- the first is **selection of producers**, looking at the sequences of production companies affiliated to a specific TV broadcasting company/ channel;
- the second is **collaborative projects** and specifically international media project that were realized in the years covered by the analysis.

The dimension of time is very important for understanding how fiction projects are created, their composition and their scope. Part of the analysis of the dataset has thus been performed on the longitudinal set, analysing different types of time sequencing (years, broadcasting period, industry performance).

### Analysis of international collaborative relations

Large collaborative projects (with more than three partners) represent a unique way of introducing **innovative elements** in the market and to foster change in the fiction production sector. Frequently an International collaboration gives way to another project in the following period (graph).



Blue squares with n. are fiction producers (companies), green squares are collaborative fiction projects (fictions with more than two producers). The intensity of the green shade increases with time.

The effects of industry re-organization processes that involved all the producers in International and domestic production was detected in terms of N. ties, Av. Degrees and Density (2-mode networks). The analysis shows that the structure of the networks referring to domestic (only Italian) and international co-productions, can be sequenced in **three time periods** corresponding to : growth (1996 to 1999), consolidation (2000 to 2005) and institutionalization (2006 to 2009) of the Italian fiction industry.