Our intelligence, our sophistication, is the key to our living!... Old age without wisdom, youth without success and childhood without smiles are worthless.

[Bhajan, 2001]

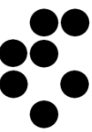# Leadership and Balance in Research

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Jožef Stefan Postgraduate School Slovenia

Based on a discussion with Marko Grobelnik, with whom we co-lead the group

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Jožef Stefan Institute, Artificial Intelligence Laboratory

Jozef Stefan Institute (JSI) is the leading Slovene research institution for natural sciences (900+ people) in the areas of computer science, physics, chemistry, ecology
Artificial Intelligence Laboratory has over 40 people working in various areas of artificial intelligence (machine learning, data mining, social network analysis, semantic technologies, computational linguistics, logic)

Spinoff-s: Quintlligence, Cyc-Europe, LiveNetLife, ModroOko, Envigence
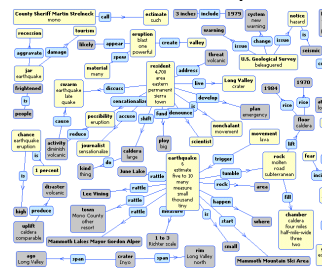
Academic Partners: Carnegie Mellon, Cornel, Stanford, MIT, Uni. Maryland, KIT, UCL,…

Business Clients: Accenture Labs, Bloomberg, British Telecom, Google Labs, Microsoft Research, New York Times, Siemens, Wikipedia

Selection of Portals and Products:

- ❖Text-Garden (http://www.textmining.net)
- ❖Enrycher (http://enrycher.ijs.si/)
- ❖VideoLectures.NET (http://videolectures.net/)
- ❖IST-World (http://www.ist-world.org/)
- ❖Search-Point (http://searchpoint.ijs.si/)
- ❖OntoGen (http://ontogen.ijs.si/)
- ❖Document-Atlas (http://docatlas.ijs.si/)
- ❖Contextify (http://contextify.net/)
- ❖NewsFeed (http://newsfeed.ijs.si/)
- ❖ DiversiNews (http://aidemo.ijs.si/diversinews/)
- ❖EventRegistry (http://eventregistry.org/)
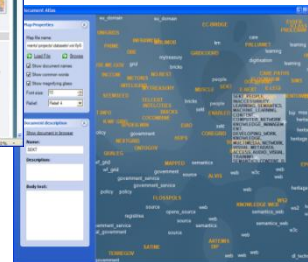- ❖Twitter Observatory (http://twitterobservatory.net/)

Semantic-Graphs

VideoLectures.NET

Document-Atlas

Selection of Projects (Integrated Projects and Networks of Excellence only):

Coordinating: XLike Cross-lingual Knowledge Extraction; **Toposys** Topological Complex Systems; **NRG4Cast** Energy Forecasting

H2020: MSCA **RENOIR** Reverse EngiNeering of sOcial Information pRocessing, MSCA **BigDataFinance, OPTIMUM** Multi-source Big Data Fusion Driven Proactivity for Intelligent Mobility, **AQUASMART** Aquaculture Open Data Cloud Innovation, CSA **EDSA** European Data Science Academy

IP: ACTIVE, COIN, EURIDICE, NeOn, ECOLEAD, SEKT

NoE: PlanetData, PASCAL2, MetaNet, Multilingual Web, LT-Web

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Leadership of a research group towards success

- Introduction
- Aligned in philosophy and leadership approach
- Maintain the flow of: knowledge, network, funding
- Internal organization flexible
- Human resources crucial
- Strategic partnerships
- Leadership challenges
- Future

Satya Nadella - Microsoft's CEO

📅 04 Feb 2014

📍 Milwaukee, United States

🏢 Computers→Companies→Microsoft Corporation ,   Computers→Consultants→Microsoft

With a perspective based on more than two decades at Microsoft as someone who pushed to make dynamic changes happen, both in the company's products and its culture, Satya Nadella says he is both "honored and humbled" to succeed Bill Gates and Steve Ballmer as the third CEO of Microsoft.

"Our industry does not respect tradition - it only respects innovation," he says. "The opportunity ahead for Microsoft is vast, but to seize it, we must move faster, focus and continue to transform. I see a big part of my job as accelerating our ability to bring innovative products to our customers more...

Content to display: ☰ Articles ⌄

Articles

Below is a list of articles describing the event.

eng 26   ★

First ‹ 1 2 › Last

Won't wait 4 years between tweets, vows Microsoft boss Satya Nadella

05 Feb 201

The day after he was picked as Microsoft's CEO, Satya Nadella made a big announcement. "first commitment as CEO...i won't wait 4 years between tweets!" he posted. His last tweet, in 2010, was about Microsoft Bing.

Nadella, 46, is only Microsoft's third CEO in 39 years, taking over from Steve ...

Coordinating EU project – great experience taking a lot of energy

- **success** depends not only on the partners expertise and the project content but also on **flexibility of the partners and the project reviewers**
- **"good" partner**
    - not a partner that blindly functions by contract (which is unfortunately often case with commercial partners)
    - it is a partner that **shares the project vision** and contributes to the projects as needed often grabbing unplanned work without additional payment
- **Small things matter**
    - team building, kind words, respect for dif
    - Project meetings are primarily for work a should also contribute to team building (e
- **Strong team** contributes to a project
- Project should be a **joint adventure**

SolEUNet

EU RTD projects
Differences everywhere ☺

Research vs. commercial

- Basic motivation is different (eg. research publications vs. commercial benefits)
- Differences in personal motivation and approach to work
- Differences in workload and priorities (what is natural for one may be difficult to understand for other, eg., conference seasons shaping life of researchers)

Collaboration requires some flexibility - very evident in EU projects

- at least a few partners (core of the project) should have a project vision and good motivation to keep the project running through its rough time

Leadership

> Engage others to support you in reaching the goal

- Leadership in US academic environment has been described as "*a process of social influence in which a person can enlist the aid and support of others in the* **accomplishment of a common task**".

[Wikipedia, 2015]

> Reach the goal involving, elevating, supporting others

- Leadership is *the art to **induce an improvement to bring to realization the project/mission** based on a vision*

  - *reach the goal involving, stimulating, elevating other people through your projection, caliber, example, leadership, command*

[Singh Avenali, 2013]

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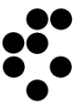
Everyone is a kind of leader

Scientific work usually assumes some leadership, implicit or explicit

- **Implicit leadership** in the nature of scientific work
  - Individual work, where we **lead ourselves** in forming research vision and goals, planning path to the goals setting scientific hypotheses, conducting research, presenting/writing
  - Pear collaboration, where **leading is collaborative** towards the common goal, with distributed efforts and responsibilities

Explicit leadership

- **Explicit leadership** in scientific collaboration
  - Work in organized research environment with a **predefined leadership** structure of the formal organization
  - Work with junior researchers/students **you are advising**
  - Collaboration with other researchers where one person is **leading** the initiative and ensuring progress
  - Work on formal projects, where **leaders** are **predefined** and limited to the scope of the project

"In order to be able to lead others, a leader must be authentic and experienced in leading himself by combining both intuition and intelligence." [Singh Avenali & Mladenic]

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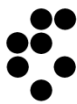
Common philosophical fundamentals (no non sense)

Core team should **be aligned in philosophy**

- Common **vision**
    - long term (eg., AI, Text understanding, global social dynamics, sensor analytics)
    - midterm (eg., research projects on multi-modal data analytics)
    - short term (eg., research problems/hypotheses, project deliverables)
- High **enthusiasm** towards achieving results
- **No religion on topics**/tools/methods – use what fits problem the best
- **No nonsense in research** – investment of time + energy should bring some kind of profit
- **No corruption in research** – ownership of ideas, approach development, results reporting, collaboration, paper writing, funding

Maintain vision and enthusiasm - *"being a scientist is more a way of life than an occupation"*   *[Mladenic, 2005]*

Common approach to leadership

Each research project is a chance **to enhance your assets** (knowledge, algorithms/tools, publications, social network,…)

- and have a better starting position for your future work
- …instead of minimizing the efforts for fulfilling the requirements or just ensuring funding for the people

Reach the goal **with people improving**

- in knowledge/experience, consciousness, happiness, richness
- after finishing a research project people should have more (individually and as a group)
- keep going until everybody walks away feeling good, achieve a win-win situation, everyone wins so there are long-term benefits

Be grateful for all things and **show the gratitude**

- acknowledge contributions, do little kindness - when you express your gratitude people are inspired to give more

Maintain the flow

- Knowledge/experience
  - group and individuals growing in knowledge and experience
- Social network of partners
  - sharing and exchanging via publications, collaboration on projects, research visits, internships, teaching, presenting
- Constant funding
  - ensuring right circumstances for performing research

"Information is accessible to everyone, the challenge is to consciously choose the right information and verify it through your experience."

[Singh Avenali & Mladenic, 2016]

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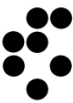
Balanced research activity

Covering research of different nature gives **stability**

- Applications – very fast changes
- Applied research – fast changes
- Basic research – interdisciplinary (eg., AI, Mathematics, Hardware – sensors) – slow changing

Specialization and interdisciplinarity emphasize **depth**

- Cover a few research topics in depth (eg., data analytics of text data and social networks)
- Application to a specific business scenarios (eg., media monitoring, modeling complex data)

*"The outer education provided by the information revolution must be matched by an inner education in wisdom, self-control, intuition and the use of the neutral mind."*   [Bhajan, 2003] ailab.ijs.si
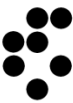
Flexible internal organization (no rigidness rule)

- Preferably almost flat organization
  - any **hierarchy emerges naturally** based on contribution
  - changing to accommodate current projects, responsibilities/workload
- Well defined roles
  - it is **clear who is responsible for what** in any moment
  - expansion of the group articulates **new roles** (eg., financial management, project logistics, research promotion)
- As fluid as possible
  - **roles depend on the context** (eg., one can have different roles at the same time depending on the project)
  - accept the unexpected

Flexible organization facilitating personal and group progress
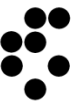
Identify the needed roles

- **Predefined roles** to make it all function harmoniously
    - based on theory/practice articulate demand for people of different profiles/talents (eg., project manager with research and programming skills & secretary)
    - prepare what is needed to support them (eg., space, equipment)
- **New roles** may emerge on the way
    - due to the progress/growth (eg., financial issues separated from secretarial)
    - due to the nature of work or approach (eg., programming sensor platforms, project logistics handled separately from project management)

Information, Knowledge ... Truth?
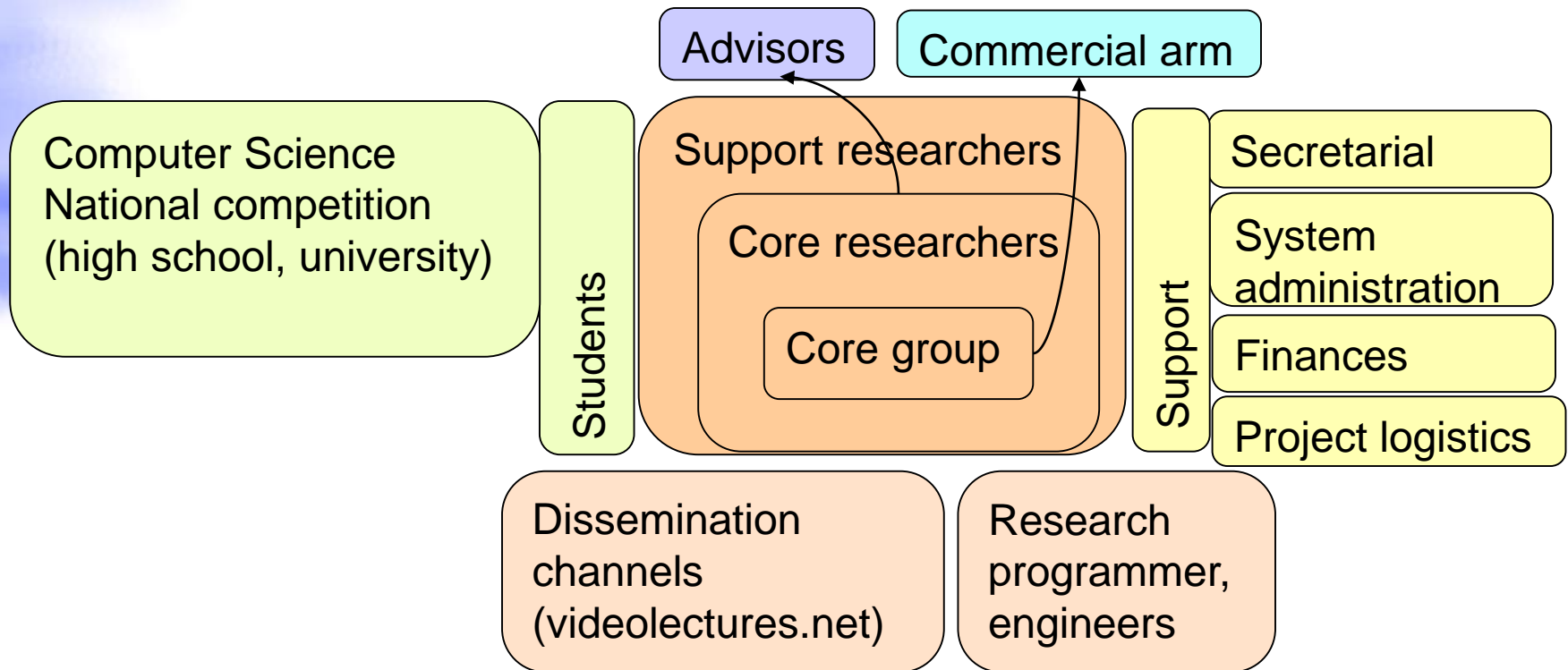
Dunja Mladenić | Jožef Stefan Institute, Ljubljana

UMETNA INTELIGENCA

Big Data
Information, Knowledge,...Truth?

Dunja Mladenić

Artificial Intelligence Lab, Jožef Stefan Institute, Slovenia

Balanced internal organization (informal, organically grown)

Advisors

Commercial arm

Computer Science National competition (high school, university)

Students

Support researchers

Core researchers

Core group

Support

Secretarial

System administration

Finances

Project logistics

Dissemination channels (videolectures.net)

Research programmer, engineers

- Support team at the group level (in addition to institutional support)
- Commercial arm aligned with the core group
- Part-time employed international advisors

Human resource management (no fighting)

- **High trust** between people is fundamental
  - transparency in communication, no gossiping
  - early conflict detection and prompt conflict resolution
  - no tolerance on bluffing: no need to pretend to be what you are not, strengthen your talents and elevate your weaknesses
  - everyone understand the game, open sharing of knowledge/experience
- **Good human relationships** within the team
  - tight inner collaboration, share working as well as private time
  - recognize we are on the same boat, support each other
  - group interests are priority (common vision)
  - individual interests are priority on a long run, working towards enabling individual growth in addition to the group growth

Human resources
(promote individual talents)

- Preferred profile of a person – vertical skills
  - eg., programming & mathematics, enthusiasm, some research skills, capable of gradually developing management skills
- **Science to be excellent** relies on excellent people having:
  - *Vision*, idea – have the goal bigger then you
  - *Courage*, enthusiasm for the vision – fight, cross the limits of known
  - *Grit*, persistency – stick with the goal and be ready to work hard
  - *Humility*, open mind – be prepared to listen to criticism/suggestions
  - *Knowledge* of the subject and related work – past and current study
  - *Prayer*, trust in the vision and the process – healthy openness for risk
  - *Grace* when handling difficulties – no losing time/energy fighting
  - *Determination*, strong decision – go for winning not losing, put all of you in it, merge your vision/aim and your life

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Strong Reputation and Trust

Maintain high standards of the group

- Short term
  - good performance on single tasks/deliverables
- Mid term
  - contributing to success of projects
- Long term
  - technology and alliances beyond a single project, complexity of solutions, maintaining prototypes/products

"In the context of business, your job tests your trust, as it is impossible to convince other people that you are good in your business if you do not trust yourself."   *[Singh Avenali & Mladenic, 2016]*

Strategic partnerships

Operational links – joint projects, providing technology

- Academia:
  - academic hubs (eg., shared codebase – Stanford, sharing services - CMU, sharing dissemination channels - MIT)
  - research collaboration on projects, research network
- Business
  - Collaboration on interesting projects (eg., Bloomberg, NYT, BT)
    - where there is no off-the-shelf products
    - innovative and challenging for researchers
  - Collaboration with research labs (eg., Google, Yahoo, Tweeter, Facebook)
    - joint research projects, student internships, research events
- Government
  - funding agencies on national and EU level (eg., tool for analytics of funded projects)

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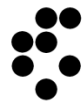
Leadership in Science

Leadership in science should **support excellence**

- **everyone growing** professionally and personally in consciousness, gaining experience

- **no attachment** to research results fulfilling our expectations, see beyond the immediate situation (eg., negative result may be lead to a new discovery) – long term vision

- **be flexible**, adjust to new situations (new research findings, new funding schemas, new problems, new technology,..)

- **see opportunity** in every situation - learn from experience, keep going

- **be authentic**, know and use your strengths and weaknesses

"…you will only be appreciated if you appreciate the good side of your students. If you want to tell someone they are rotten, just appreciate their good side instead. They will fully realize how rotten their other side is."
[Bhajan, 2001]

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Challenges for a Leader I

- Maintain the **common vision** over time
  - the initial vision may come intuitively, but then it requires conscious effort to maintain it and a strategy to mover towards achieving it
  - eg., regular research retreats help aligning whole group with the common vision
- Maintain **high quality standards** – good work speaks for itself
  - before, during and after, as a part of your group code of conduct
- **Do not get lost**
  - it is easy to expand and lose your anchor, your original vision
  - ensure quiet time for yourself and for getting together with the core group
- Handle difficult situations **gracefully**
  - find a way to be calm, open minded and kind (eg., a simple 4-stroke breath may help)

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Challenges for a Leader II

- **Delegate work**
  - If something can be done by someone else in the group then you as a leader – delegate
  - Clearly specify what needs to be done, supervise at the beginning as needed
  - Trust others and given them a chance to take more responsibility

Keeping too many roles on yourself is wasting time for things that others can do and thus only **partially utilizing your own talent**

Challenges for a Leader III

- Lead the whole group **towards/in success**
  - **Develop a strategy** to realize your vision (micro and macro level)
  - Know in advance the possible **consequences of success** (eg., group expansion requires more office space, as a leader you become a multi threaded person – multiple tasks, multiple worries, multiple responsibilities,…)
  - Understand the **needed energy/resource in advance** (eg., getting quality people, your own time investment)
  - Consider **possible problems and develop plan "B"** (eg., reduced funding opportunities, shift in research topics)

Successful leader means that the **whole group is successful** – people are **happy and prosperous** (eg., if the people are exhausted at the end of a project and unhappy, it is only a partial success)

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Future leaders

- Experience in **leading themselves**
  - clear enough to understand what is happening around
  - in control of your mind, do not react but act in situation
- **Self-respect**, so others can respect you
  - recognize who you are, you qualities and weaknesses and use them, do not pretend to be what you are not
- Discipline to **hold their intention alive**
  - notice and use opportunities, use challenges to gain experience
- **Flexible** on all levels: mental, physical and spiritual
  - capacity to hold the situation and encourage others
  - have a personal code of conduct (eg., no blame, complain, compare, gossip)
- **Recognize talents** of others and support them
  - successful leaders make others successful