We need to change GIS – from top down to bottom up and vice versa

DI Walter H. MAYER, CEO PROGIS
for Geospatial World Forum, 23.-27.4.2012,
Amsterdam, NL
I. History and challenges

- 1970: Mainframes & dumb terminals dominated IT
- On top was defined what others could do or see!
- Mapping came then from military: Was top down!
- Few user-interaction possible - in GIS still today
- Top down because of old “Information is power“!
- Changes happen outside, never in the office!
- Without bottom up links, every map is history!
- GIS was driven by experts instead of users
• Future must manage top down AND bottom up!
• Ownership of information has to be respected!
• Legislation, advise, certificate, control, ecosocial!
• Split power – we know since ancient Greeks!
• Map alone is no benefit, we had them long ago!
• **Bottom up GIS**: must be part of standard ICT, easy to use, supportive, fast response, valuating benefits, for the users and the chain – same map!!
• PROGIS technology, models and experience in agro-forestry-environment-risk chain-management show new possibilities, but

• much work and lots of understanding and change of stakeholders and more cooperation is needed!

• Need PPP models (share activities/responsibilities, exact plans, controllable, measurable, benefit-pay)

• PROGIS model is transferable to other sectors
II. The smart planet – a guidance:

- IBM: “We have to have a smarter planet”
- The planet and nature are smart – people and technology must become smarter!
- IBM’s marketing campaign = PROGIS model!
- Turn information into insights:
- Drive operations’ effectiveness/efficiency:
- Increase agility:
- Connect and empower people:
- Enable service and innovation:
- Manage risk, security, compliance:
III. The SME-focused approach:

• Additional facts how GI-sector will change/move

(Geospatial World, Prof. Dasgupta):

• SMEs can bridge the gap:

• Innovative solutions: opportunity large players & SMEs

• SMEs drive innovation, new jobs, competition:

• SMEs are innovators, (service and trading SMEs will be outsourced):

• We need better integration of technologies

• SMEs – have to have domain knowhow
• SMEs increases awareness, possibilities:
  SMEs turn challenges into opportunities &
• SMEs break walls of traditional thinking:
• SMEs create knowledge and business value
GIS – WinGIS spatial engine and AX-Development environment

AGROOffice - applications integrating GIS + time, DB, expert data

MICROSOFT BING Geodata (worldwide) or any other Geodata (vector/raster)

System integrator for partners with meteo-sensors, GNSS, i-net, mobile technologies, RFID, GPRS / UMTS communication, GPS/dGPS, ........

PROGIS has sector know how:
- Agro-forest-environment-risk
- technology and org-know how
- visions how to solve problems!

- AGROOffice
- DokuPlant
- LOGISTIC
- mobGIS
- Precision farming
- Virtual farming
- ForestOffice
- EnvirOffice
- Z-GIS (LAND-CONSOLIDATION)
- On demand
- Consulting
AGRO – ICT - BACKBONE

PUBLIC USERS
Ministries, extension services, universities, schools

PRIVATE USERS
farmers, foresters, advisors, industries

Infrastructure is a must
Public, Private or PPP !!!

MICROSOFT-BING-Images
Weatherstations
PROGIS-ICT technologies

MICROSOFT Bing Maps
worldwide geo db

IT-Partner
Cloud data Trust center

worldwide landuse db

COUNTRY-ICT-BACKBONE + PROGIS IT
COUNTRYWIDE DEVELOPMENT

COUNTRY ICT-BACKBONE

MICROSOFT-BING-Images + Weather-stations + PROGIS-ICT technologies

- Land consolidation – Z-GIS
- Environment & Risk - Tools
- Prec.-Virt.-Farm: PF-VF-Office
- Logistics = Central unit + mobGIS + COM
- Farm-Forest-mgmt-advice: DokuPlant/ForestOffice
- Geoinformation/Maps – WinGIS+BING-Maps+Applications

2 - 4 / 3 years

http://www.progis.com/map/?xml=weatherdemo.xml
PROGIS USER-INTERFACE

WHAT

- EXPERT-INFO AGRO: machines, crops, fertilizers, herbicides, cultivation methods, ...
- EXPERT-INFO FOREST: machines, trees, growth-tables, methods, ...
- EXPERT-INFO ENVIRO: torrent, mudflow, drought, flood, avalanche, rockfall, ...

WHERE

- DONE BY LOCAL EXPERTS (GROUPS)
- MANAGED SUSTAINABLE (UPDATE!!!)
- COOP WITH internat. ORGANISATIONS

WHEN

patents pend.

LOCAL EXPERTS

MANAGED SUSTAINABLE

COOP WITH internat. ORGANISATIONS

www.progis.com
I. FARMER/ADVISOR/FORESTER

- planing, documentation of all activities
- energy-, carbon-, nutrient-balance
- cost-profit margin calculation, inventory
- localized subsidy management
- business plan, insurance data
- thematic maps, ...

II. REGIONAL SOLUTIONS

- VERTICAL/HORIZONTAL INTEGRATION:
  - Logistics + mobGIS, Precision Farming
  - Virtual Farming, industry integration
  - environment- and risk-management
  - (sub-)regional agro-, forest-, enviro-center

- GlobalGAP, FSC, PEFC, trust centre, ...

Farmers
Subsidy-Org
Chamber(s)
Advisors

MOA
ICT – company – TRUST CENTER

R&D

Machine Cooperatives
Agro-Service-Supply-Agencies
Transport-sector
Food-/Feed-Industry

LAND CONSOLIDATION

ROI

INTEGRATION OF USERS - A MUST

EXPERTS
Environment - Risk

Certification bodies
GLOBALGAP – GLOBAL2000 - ...

Controller
SGS – TÜV – LVA - ...

Banks / insurance

www.progis.com
Largest EC project: 45 cooperatives, using 100+ harvesters with mobGIS handling 100K+ datasets for 40,000 farmers on 40,000km² – all online with update all 30 seconds!

PLAN: 2012 GERMANY
- Country coverage in 2012 (170 stations)
- Precision farming on top
- Virtual farming on top
- next steps t.b.d. ……….

Harvester
Loader/Forwarder
Truck
Mobile Office

INTEGRATE AGRO-FOREST LOGISTIC
PROGIS Software GmbH
Software that Shows!
www.progis.com
Agricultural failure(s)!

Bioremediation = costs + time

Forestry failure(s)!

AGRICULTURE AND FORESTRY = SERVICES

- Air quality
- Local Climate
- Service
- Recreation
- Source of Bio-Energy
- CO2 - Sequestration
- Water quality, -storage, -supply
- Risk management – risk reduction

WOOD & TIMBER

AGRICULTURAL PRODUCTS
Isolines done with PROGIS Isomodule

INTERNET OF THINGS

Interface to weatherstation

NPK - Sensor
Task samples: Capacity to prevent Flood, land slide, torrents or avalanche risk, rockfall, mudflow, desertification, ......

- POTENTIAL OF NATURAL RESOURCES = farm- + commons (pp)
- INVENTORY NEEDED + CERTIFICATION

- calculates functionality degrees of task and areas
- defines work how to increase specific functionalities
- every task/functionality definable by experts

- supports ecological questions
- programmable by experts
- development environment
- GIS + spreadsheet
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**CADASTRE AND LAND CONSOLIDATION**

**Soil investigation**

**Geodetic measurement**

**Groundbook import**

**Cadastre import**

**LANDCONSOLIDATION WITH Z-GIS (A)**
The largest ever commercial aerial mapping program
- First ever continuous 30cm (12”) resolution orthomosaic of the USA and the Western EU
- Scope: 10,000,000 sq. km in less than 30 months

Program Milestones
- Flight operation has started March 2010
- Phase 1 ends June 2012
- Phase 2 (continuous updates) from July 2012 on

Priority Codes: Green = Urban, Orange = Dense urban cells, Yellow/White = Standard and Remote Cells
Vexcel Ultra Cam Giant (UCG) from Microsoft

*Imagery - Currency, breadth coverage, clarity*

**Other Mapping Platforms**
- Color Film
  - 5-6 bits

**Bing Maps**
- UltraCam
  - 12-13 bits
Rome, Italy
Vatican, St. Peter
Conclusion Bing

Geometric accuracy:

• Data is compliant according EU standards for LPIS (land parcel information system) and IACS (Integrated agriculture information system)

• Color and CIR orthoimages fit correctly

Tallin, November 2011
WinGIS - software that shows!

2012: more PROJECTS
more COOPERATION &
more INTEGRATION

Start today!

Thank You!

www.progis.com

mayer@progis.com