Driving the change in enterprise hospital information systems

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in2

Agenda

1. Introduction and setting the main thesis

2. Enterprise HIS architecture encountering future trends/demands

3. How can SME and patients drive the change – thru real projects

4. Back to the thesis – summary and Q&A

IN2 group

CONSTELLATION SOFTWARE INC.

30	600+	250+	450+
Years	Employees	Clients	Projects

- ■ IN2 Zagreb
- ■ IGEA
- ■ Pardus
- ■ Svam plus
- ■ IN2 Koper
- ■ IN2 Sarajevo
- ■ IN2 Belgrade
- ■ IN2 Skopje
- ■ MCS Zagreb
- ■ Libusoft Cicom
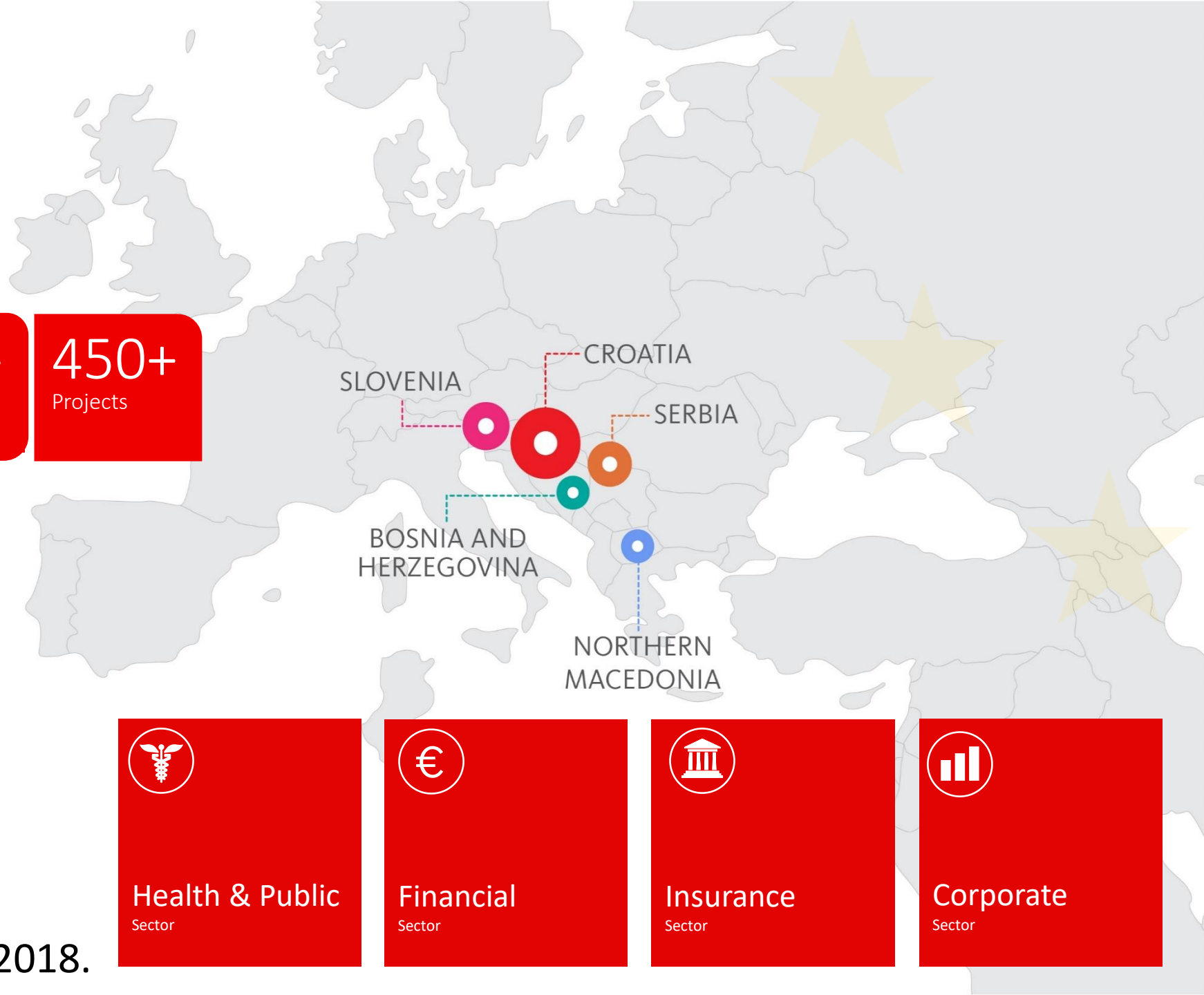
SLOVENIA
CROATIA
SERBIA
BOSNIA AND HERZEGOVINA
NORTHERN MACEDONIA

CSI – Vela – Juniper from 2018.

Health & Public	Financial	Insurance	Corporate
Sector	Sector	Sector	Sector

IN2 Healthcare sector - Croatia

Hospital IS
System - Croatia

Diagnostic modules
Infirmary/Policlinic
HL7 integrations
Hospital management

45 hospitals:
University hospitals
Regional hospitals
Special hospitals

Hospital ERP
System - Croatia

Standard ERP
HR
Management tools

43 hospitals:
University hospitals
Regional hospitals
Special hospitals

Laboratory
System - International

Biochemistry
Microbiology
Cytology
HL7 integration

5 countries
140+ laboratories
1000+ analyzers
Add-on devices
Mobile apps

eHealth
Platform – Croatia, Slovenia

eWaitingLists
eBooking
eReferral
ePrescription

2 countries (HR, SLO)
National platform
4 million eOrders/y

Hospital IS
System - International

Medical modules
Logistic modules
Integration platform
Hospital management

3 countries (AZ, VN, KSA)
Single hospitals
Multiple sales channels
Groups and Regional targets

Insurance
System - International

Terminologies
Insurance core modules
eServices (contract, invoice…)
Business Intelligence

Targeting:
Country level
Healthcare vertical
eProcesses

MCS

ePrimaryHealth
Platform – Croatia

General Practitioners
Pediatrics
Gynecology
Dental
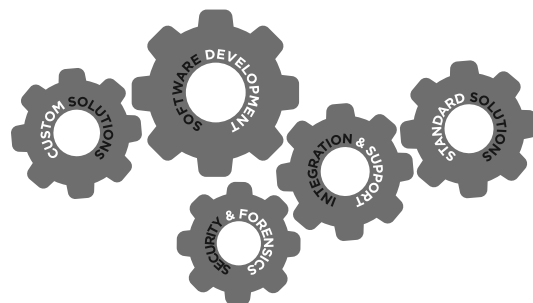
MCS

eHealth
Platform – Croatia

ePreventivePrograms
mPatientPortal
mHealth

150+50
Healthcare sector employees

Enterprise HIS architecture

Medical

- Patient EMR
- Admission
- Outpatient clinic
- Inpatient
- ER
- Operating theatre
- Maternity
- Diagnostics
- Day hospital

- ICU
- Oncology
- Hemodialysis
- Blood bank
- Pharmacy

Operations

- Dashboard
- Billing
- Cashbox & POS
- Consumables
- Administration
- Shifts & duty roasters
- Administration (IT)
- Consumption

- Purchasing
- Supplies
- Productivity

+ Medical subspecialty modules/solutions

+ Fully integrated
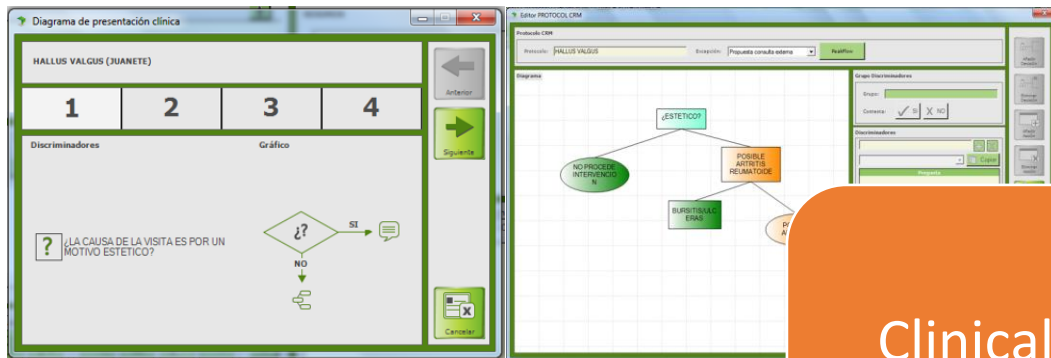
Main thesis

1. Enterprise hospital information systems are:
   - Big and slow in providing full process coverage
   - Will not disappear
   - Will change slower than users needs

2. Current trends are requiring adoption of the following concepts:
   - **Inclusion** of patients and medical staff
   - Improved quality of medical **outcomes**
   - Raising **productivity** to ensure sustainability
   - **Innovation** to support high level of change

Inclusion & Productivity
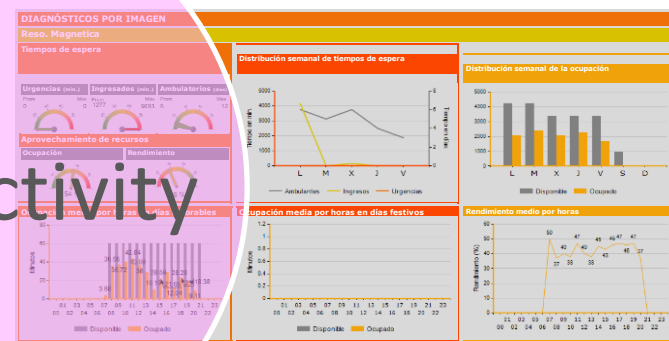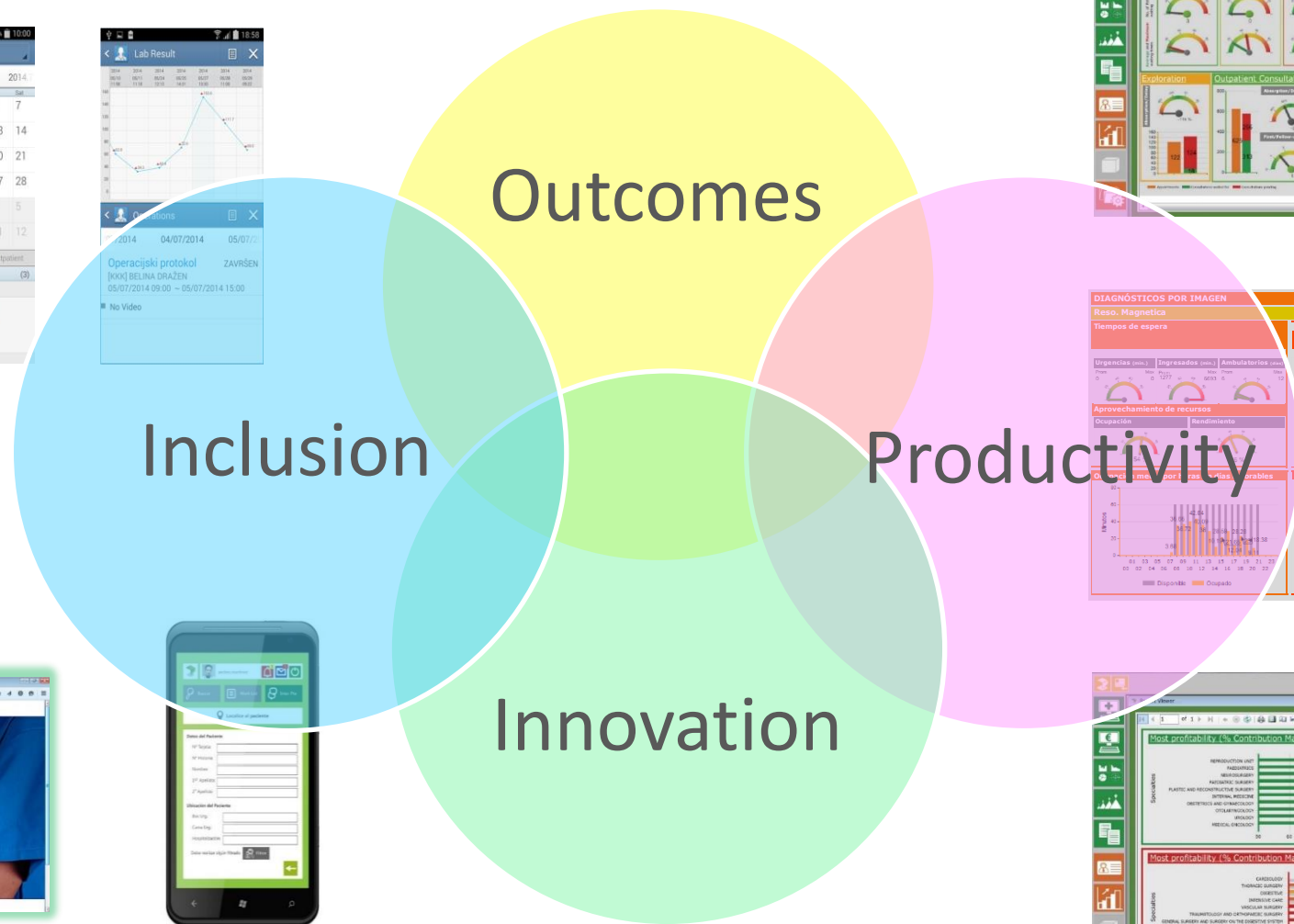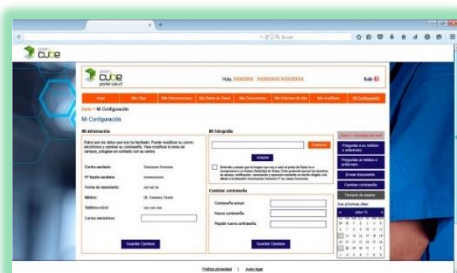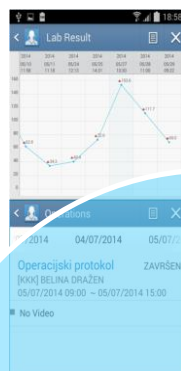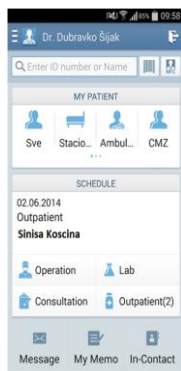
Outcomes & Innovation

Clinical pathways

Decision support & Guidelines

External knowledge

Re-engineering processes

Real projects with „non-HIS" engagement

1. Patients – Portal and mobile app

2. Patient admission – Integrated waiting rooms

3. Outpatient/Inpatient – Mobile Electronic Medical Record

4. Pharmacy – Reengineering processes thru serialization upgrade

5. Laboratory – Automatized LAB sample processes

6. Smart logistics – Hospital transport service

1. Patient portal and mobile app

- Opening hospitals to patients using new technologies
  - Patient portal (information, appointments, medical documentation, communication)
  - Next step: integrating private healthcare records

2. Mobile – Electronic Medical Record

- ## Mobile EMR

  – extending service reach

  – enabling personal touch to the patient

  – organizing physician time

  – providing secure collaboration

Daily usage analytics

48%
45%
7%

07-15h
15-23h
23-07h
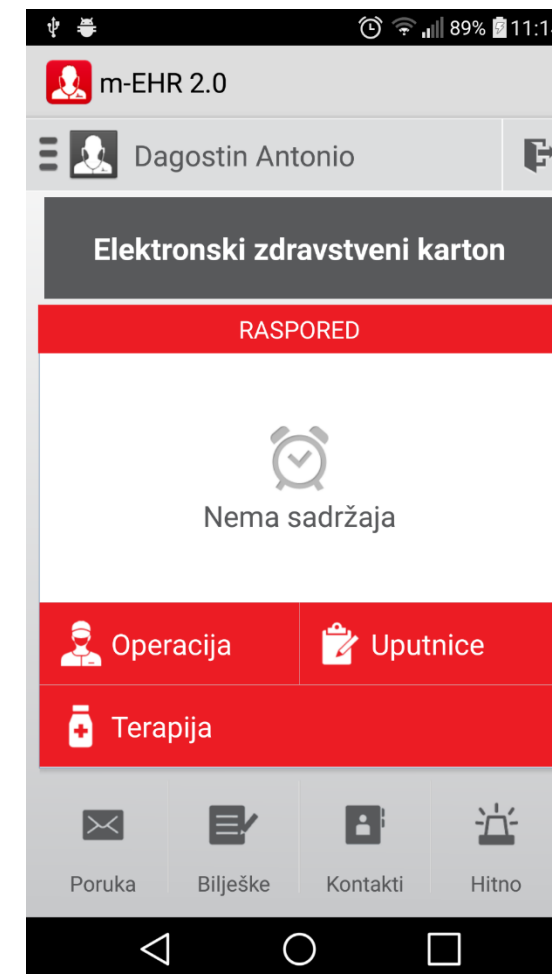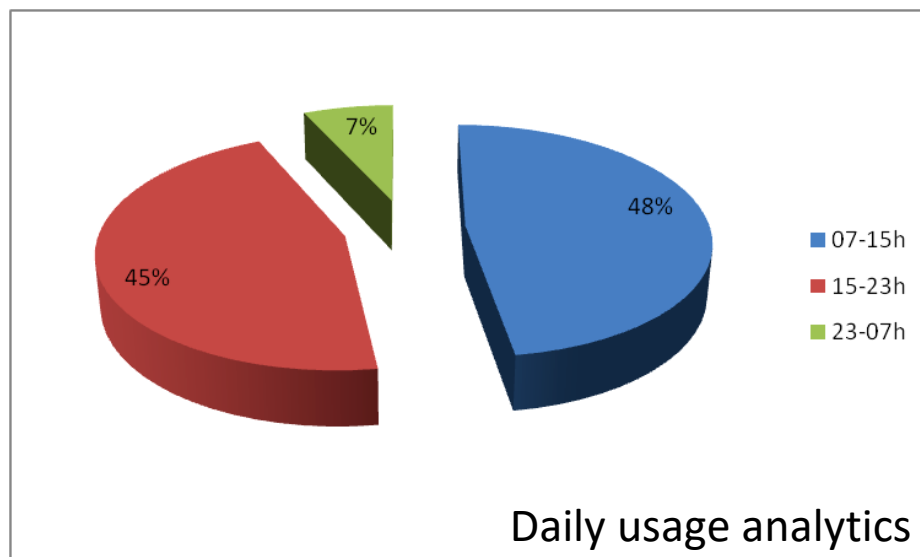
3. Patient admission – Integrated waiting room

- Use check in, queuing and infotainment systems to:

  - Speed up waiting room process

  - Boost productivity

  - Manage your clinic

  - Smart patient reorder engine

    - First-come-first-serve

    vs

    - Time-of-the-order

  - Fully LIS/HIS integrated

  - Fully GDPR compliant

4. Pharmacy – Reengineering processes

- ## Medicine cart preparation
  - cart preparation without paper
  - fully mobile process
  - EU legislation supported (from February 2019.)
  - automatic authenticity verification
  - integrated ERP material processes
  - supporting unpacking / full box issuing
  - supporting replacements with ATC constraints
  - handover without paper (smart user tags)

5. Automatized LAB sample processes

- ## SortIN2 - Scanning LAB samples to:
  - Automate admission process
  - Eliminate human errors
  - Ensure traceability
  - Achieve accreditation metrics

- ## ArchvinIN2 – Scanning to:
  - Automate archiving process

  - Fully LIS integrated

6. Smart hospital logistics

- ## Smart logistics
  - confirming locations of pickup / delivery
  - tagging objects in transport
  - fully mobile
  - adaptive and predictive logic

Source: iTransport

Possible other fields for SME engagement

- Post acute care using AI technology

- Smart nursing carts supporting bedside processes

- Speech2Text and NLP AI to structured medical data

- Scanning results and medical documentation

- Introducing PHR into hospital processes

- Software robotization

- Data monetization

- Clinical trials support

- …

Q & A

Enterprise hospital information systems are:

Big and slow in providing full process coverage

Will not disappear

Will change slower than users needs

But working together may help...

Contacts:

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