Host

Next Generation By Design

VISION

- Global network
- Shift the Market to enable Plug and Play - Choice-Based
- Specific problems → market relevant solutions
- Targeted collaboration
- Knowledge transfer
- Development and Deployment

2 previous editions

1st Edition. 2018
Palau Macaya

2nd Edition. 2019
Palau Macaya

3rd Edition!

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NGBD Webinar Series Schedule

| Webinars	Title	Date
Webinar 1	Comparative Taxonomy Management	Tuesday, 12th May, 2020
Webinar 2	Next Generation Education Systems	Tuesday, 19th May, 2020
Webinar 3	Exploring New Frontiers	Tuesday, 26th May, 2020

Exploring New Frontiers

| Part			
Welcome	Host: Francesc Santanach-Delisau	~ 5 minutes	
Presentations	Facilitator: Beth Havinga	Panelist 1: Hanna Elving (Swedish Edtest)	~ 10 minutes
		Panelist 2: David Baneras (Universitat Oberta de Catalunya)	~ 10 minutes
		Panelist 3: Daniel Knox (SUNY)	~ 10 minutes
		Panelist 4: Alejandro Jara Weitzmann (Smart Republic)	~10 minutes
Discussion	Facilitator: Beth Havinga	~ 15 minutes	
Closing	Host: Francesc Santanach-Delisau	~ 5 minutes	

Remember!
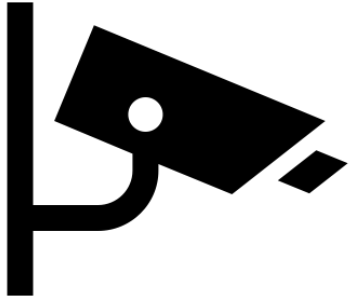
Sessions are being recorded

Questions?
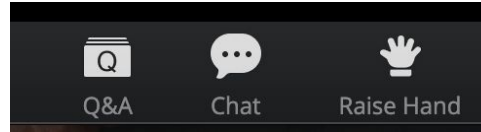
Ask in the Q&A

Raise hand
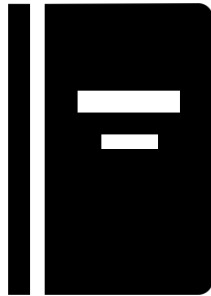
Facilitator will ask your question for you

You ask your question

And after the webinars?

Recordings will
be posted

Summary paper
will be published

Panel of Innovators

Hanna Elving
Manager
Swedish Edtest
Testbed

Dr. David Baneras
Lecturer
Universitat Oberta
de Catalunya

Daniel Knox
*Asst. Provost for
Academic Planning
& Student Success*
State University of
New York System

Alejandro Jara
Weitzmann
CEO & Co-Founder
Smart Republic

Hanna Elving
Manager
Swedish Edtest
Testbed

The core in Swedish Edtest

" The driving force in the test bed is to **narrow the gap** between learning and digital development.

With a narrowing gap, digital tools and teaching methods can **develop together** and to a higher extent **address real needs** in the "classrooms",

as well as strengthen teachers' competence to **choose and evaluate learning resources**. "

Are we really exploring new frontiers?

We learned from others (Finland and Smart learning environments in Helsinki and Nesta Edtech Innovation Testbeds).

We know that both teachers and Edtech companies have problem to meet and handle the frontier between them.

We focus on ways to create more value from the interface between ed and tech.

So, we are exploring an old frontier that needs new tools in order to transform into a value creating interface.

Value for Ed

Awareness, monitoring and the ability to choose and evaluate digital learning tools

Digital competence among teachers

Involvement in the development of new edtech

Entrepreneurship in schools

Innovation in the classroom

Value for Tech

Product development based on knowledge about the everyday needs in the classroom

Marketing

Business development

Matchmaking, relations, references

Finance

Method is the tool for value creation

Today, models, processes, tools and know-how to conduct evidence-based evaluation and implementation of new (digital) tools for learning in schools are **largely missing**

Our goal is to develop the practice of testing, evaluating and choosing learning resources in **everyday learning environments** such as schools, work-places and universities.

The method and process has to fit a complex everday learning environment with tight timeschedules, rules and regulations, different individuals with different needs, and uncountable social interactions every day that all are different from the other.

Our method gives support to companies and teachers and makes it easier to test and "safer" to interact and share learnings

Preparation of the test:

Identify your need and purpose

During the test:

Cards helping you ask the right questions according to your need/purpose

After the test:

Evaluation that match your purpose with the test

How do we measure success?

Teachers feels empowered to choose and evaluate a digital learning tool.

Companies know more about the everyday life in the classroom and can use their new knowledge in their product development.

Testing with our method are used after our initial project period (nov 19 – nov 21)

We conduct 150 tests until nov 21 – today we have around 30 going on.

SWEDISH EDTEST.

with finance from

VINNOVA
Sweden's Innovation Agency

Partners:

NACKA KOMMUN

LIDINGÖ STAD

BÄSTA LIVSPLATSEN
Region Halland

NetPort
SCIENCE PARK

Halmstad

Uppsala kommun

NACKADEMIN

HÖGSKOLAN I HALMSTAD

ABB Industrigymnasium
VI UTBILDAR FÖR EN BÄTTRE VÄRLD

FÖRETAGS EKONOMISKA
INSTITUTET 1888
FEI.SE

Swedish Edtech Industry

lilla nacka
FÖRSKOLA OCH SKOLA

AcadeMedia

www.edtest.se

Dr. David Baneras
Lecturer
Universitat Oberta de
Catalunya

LIS: Learning Intelligent System

(Chapter 2)

TUTORING SYSTEM POWERED   BY   AI
                        EMPOWERED FOR YOU

David Bañeres, Abdulkadir Karadeniz,
Ana-Elena Guerrero, M. Elena Rodríguez

One year ago in a palace far, far away…
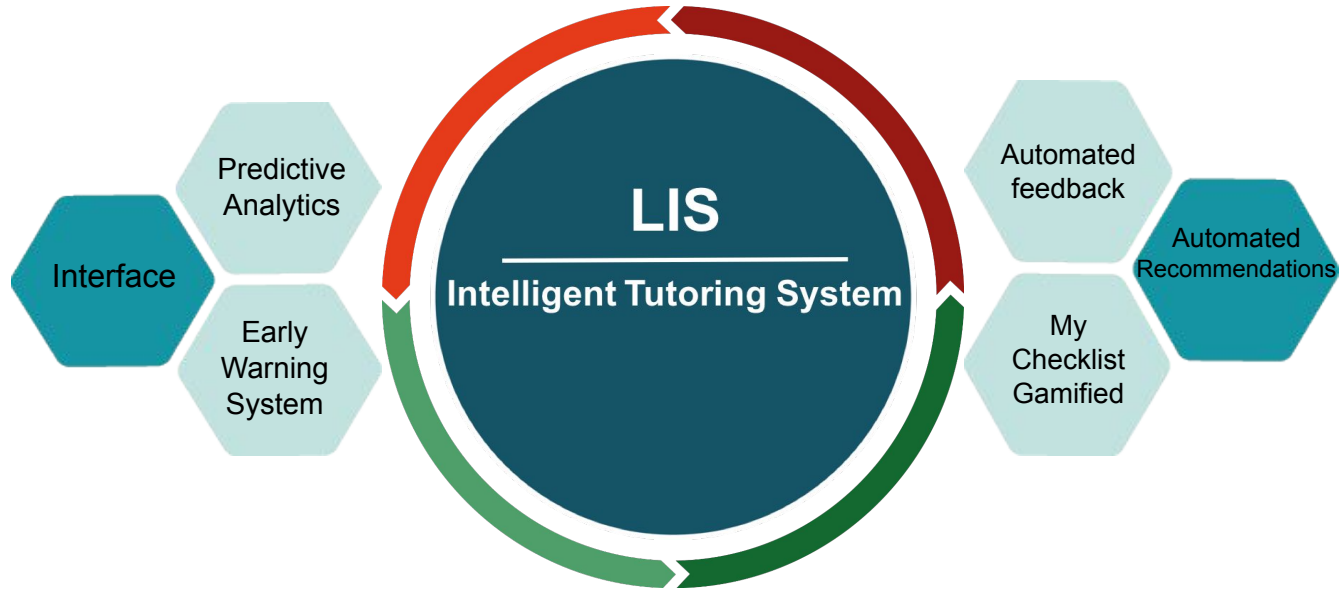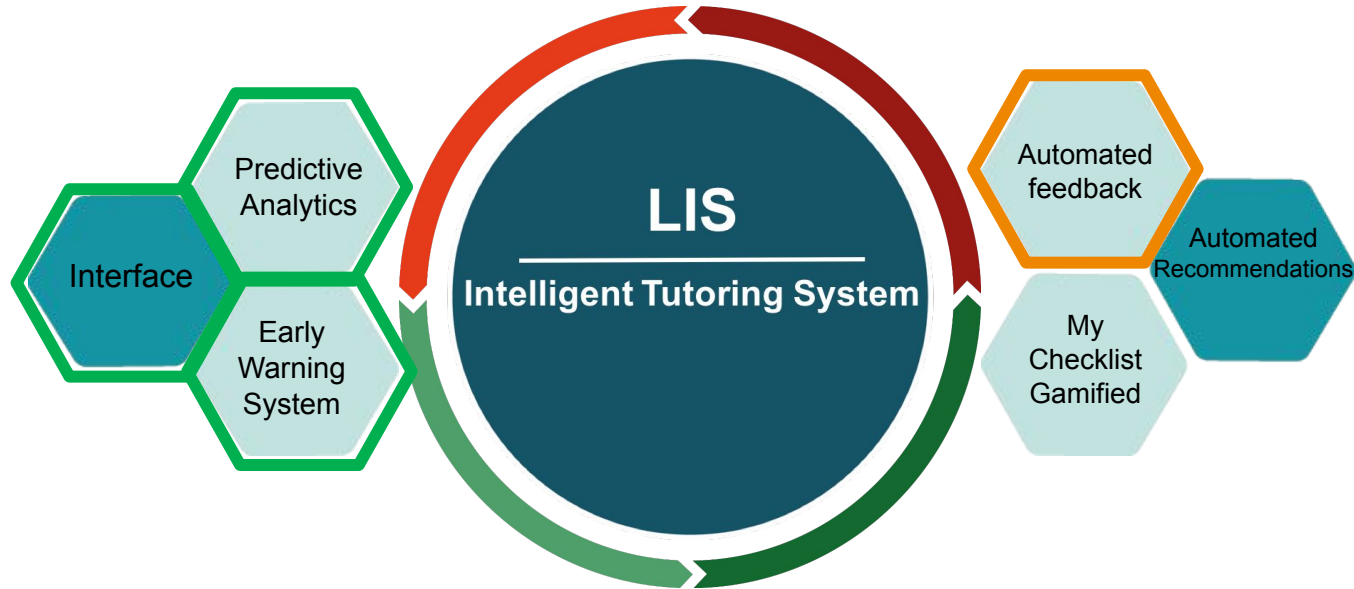

Principal Aim

To develop an adaptive system to be globally applicable at UOC campus to help students to succeed in their learning process.
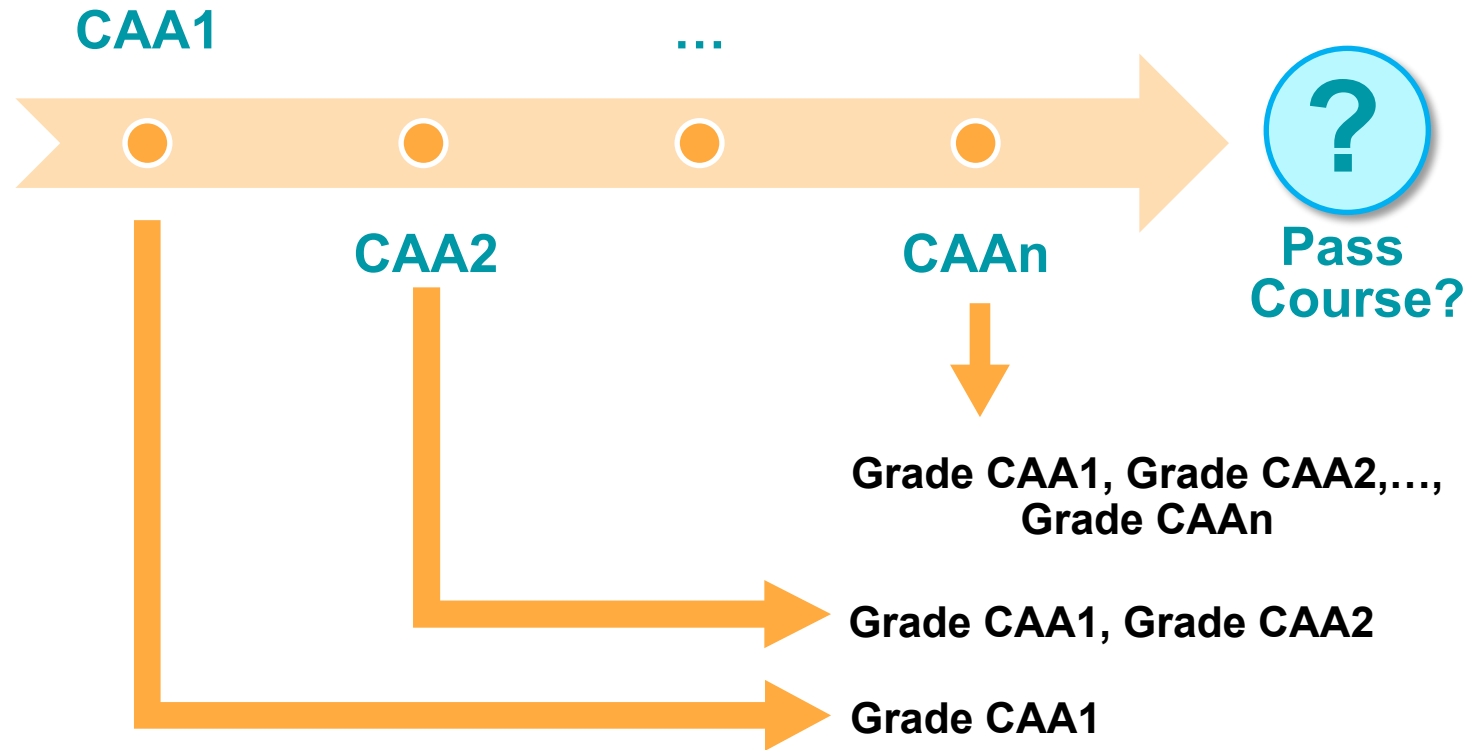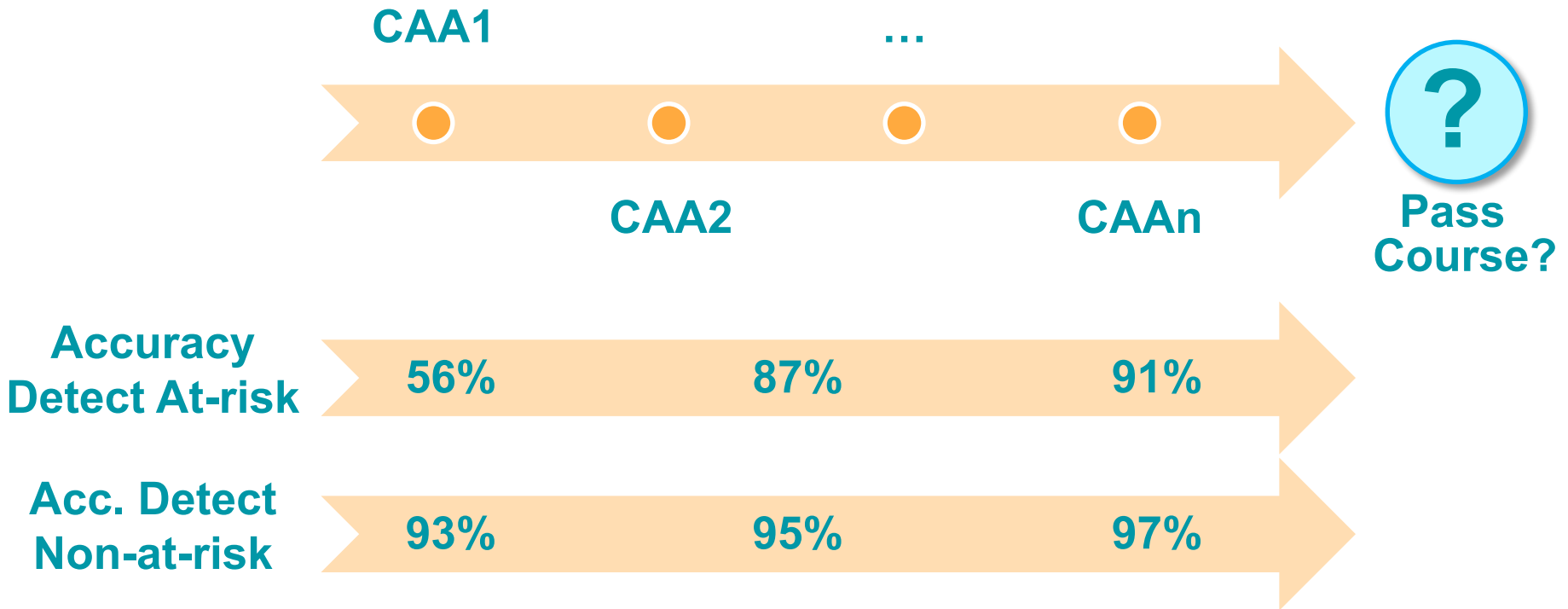
Research topics

Research topics

Students at-risk identification model v1

Students at-risk identification model v1

Students at-risk identification model v2
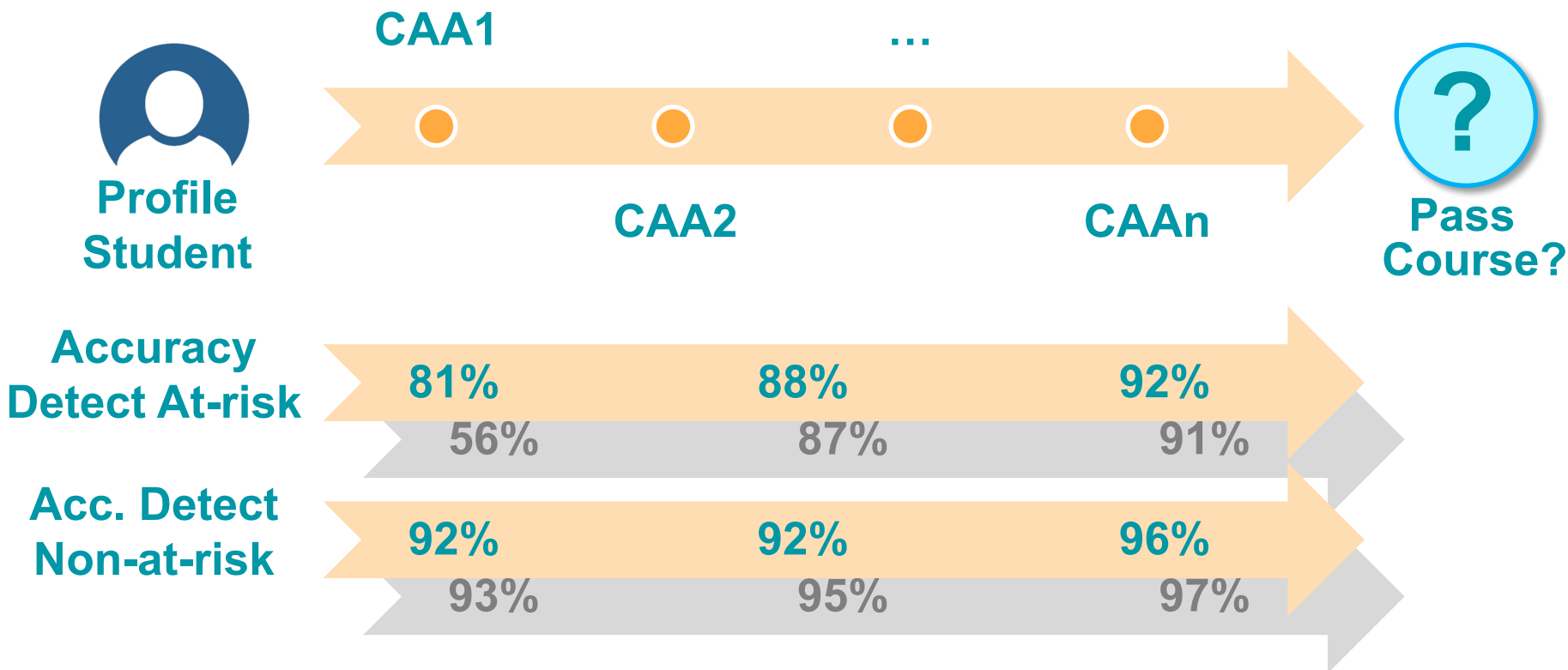

Profile Student

CAA1   ...   CAAn

CAA2

Pass Course?

Newbie Student
Enrolled Subjects Semester
Number of Enrolled Credits
Failed Times Course
GPA

+
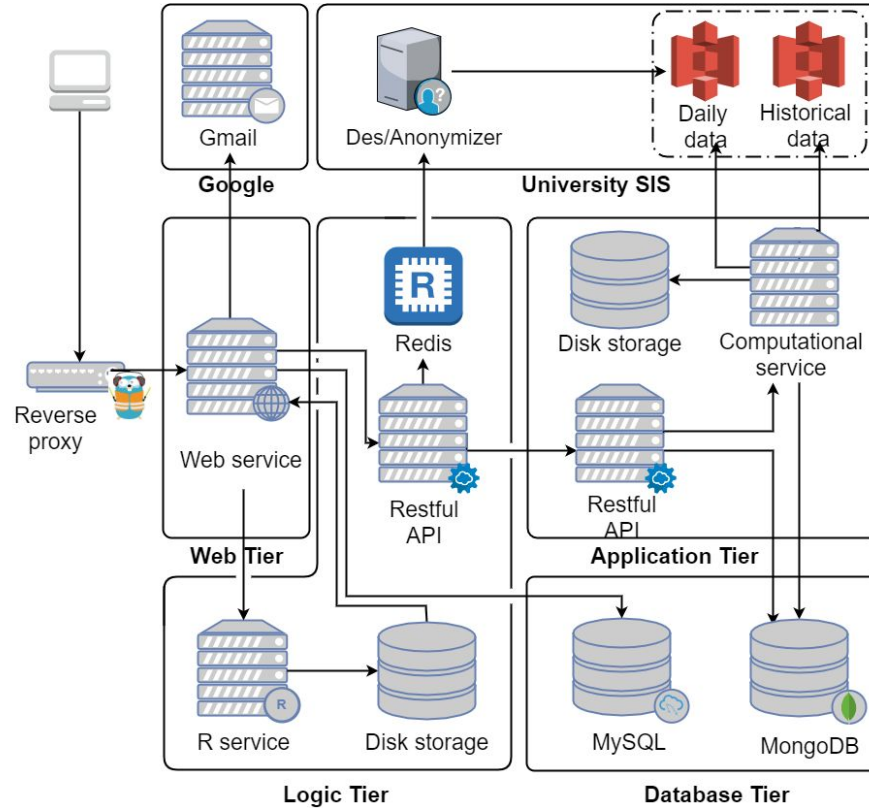
Grades CAA

Students at-risk identification model v2

Infrastructure

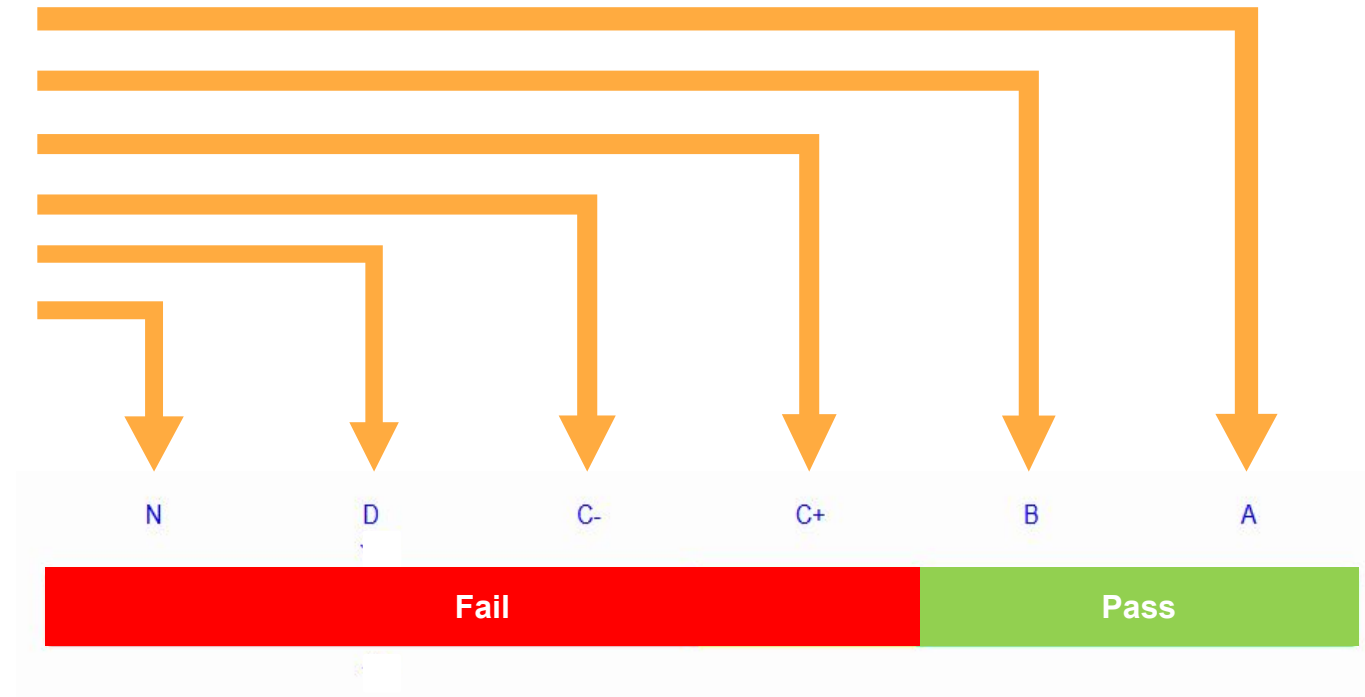# Student's dashboard v1

Grade CAA1	Grade CAA2	Pass?
B	A	PASS
B	B	PASS
B	C+	FAIL
B	C-	FAIL
B	D	FAIL
B	N	FAIL

N   D   C-   C+   B   A

CAA2   Fail   Pass

Student's dashboard v2

- YES — TNR ≥ 75%?
  - YES → Likelihood to pass (G)
  - NO → May pass but low accuracy model (Y1)
- Grade ≥ Pred?
  - YES → TNR ≥ 75%?
  - NO → Grade ≥ C+?
    - YES → Pass the activity but grade lower than prediction (Y2)
    - NO → Non-Submitted ≥ 2?
      - NO → Non-Submitted = 1?
        - NO → TPR ≥ 75%?
          - NO → May fail but low accuracy model (Y3)
          - YES → Likelihood to fail (R)
        - YES → One activity non-submited (B1)
      - YES → Consecutive non-submited (B2)
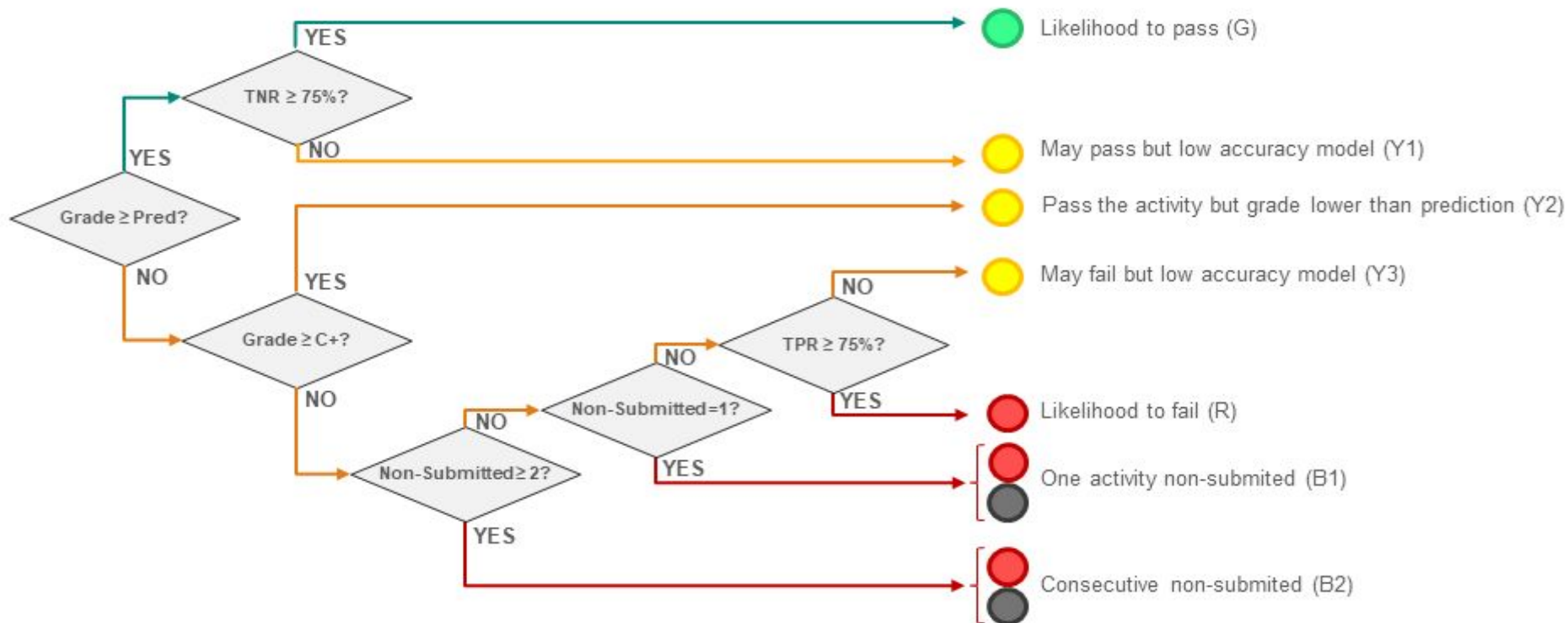
Student's dashboard v2

Grade CAA1	Grade CAA2	Pass?
B	A	PASS
B	B	PASS
B	C+	FAIL
B	C-	FAIL
B	D	FAIL
B	N	FAIL

N   D   C-   C+   B   A

CAA2

at-risk	medium	low
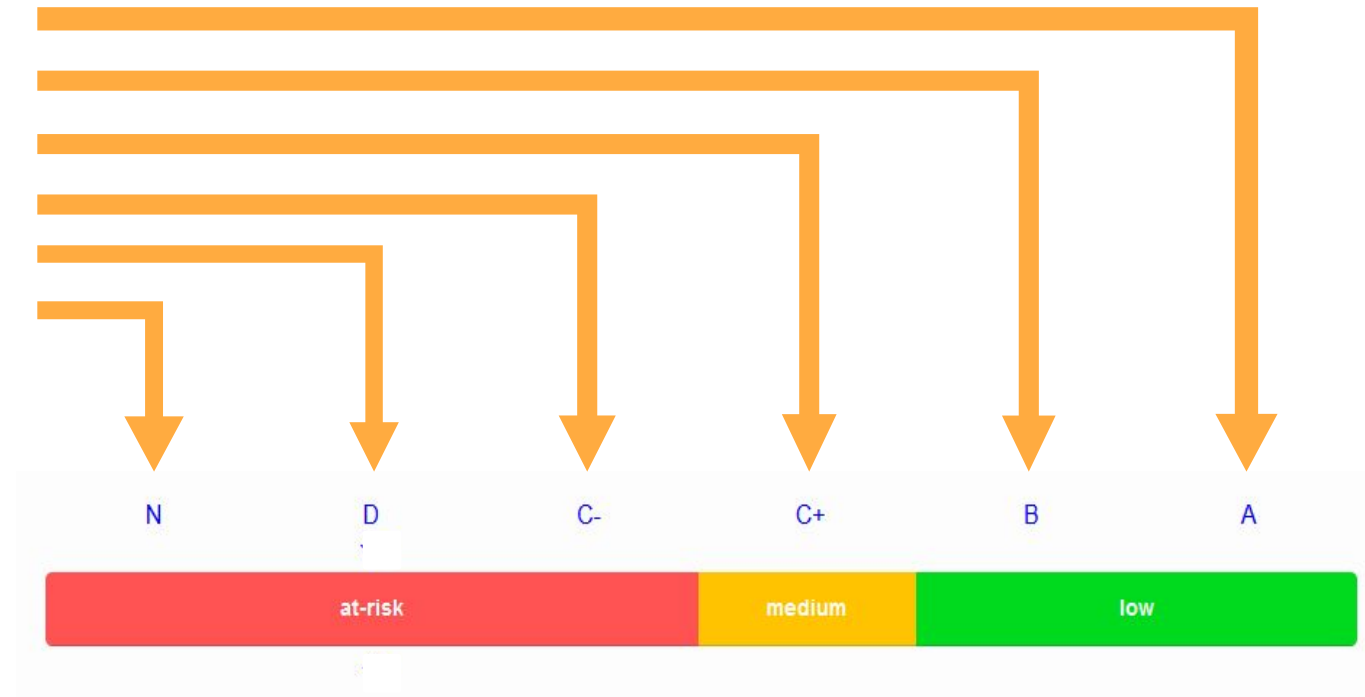
Teacher's dashboard

Students of the classroom													
User	Name	Last login	Consent signed	CAA1		CAA2		CAA3		Final project			
				Prediction	Grade	Prediction	Grade	Prediction	Grade	Prediction	Grade		
		13/05/2020	Yes - 26/03/2020	🟢 B	A	🟢 D	B	🟢 D	Cm	⚪ D			
		10/05/2020	Yes - 31/03/2020	🟡 A	B	🟢 Cm	B	🟢 Cn	Cm	⚪ Cn			
		18/05/2020	Yes - 30/03/2020	🔴 B	Cn	🔴 Z	D	⚫ Z	N	⚪ A			
		12/05/2020	No										
		15/05/2020	Yes - 05/03/2020	🔴 B	D	⚫ Z	N	⚫ Z	N	⚪ Z			
		18/05/2020	No										
		18/04/2020	Yes - 10/03/2020	🟡 A	Cm	⚫ A	N	⚫ A	N	⚪ A			
		07/05/2020	Yes - 16/03/2020	🟢 B	A	🟢 N	Cm	⚫ Cn	N	⚪ Cm			
		18/05/2020	Yes - 01/03/2020	🔴 B	D	🔴 Z	D	🟡 Z	A	⚪ B			
		12/05/2020	No										

Nudgeting system

Nudgeting system
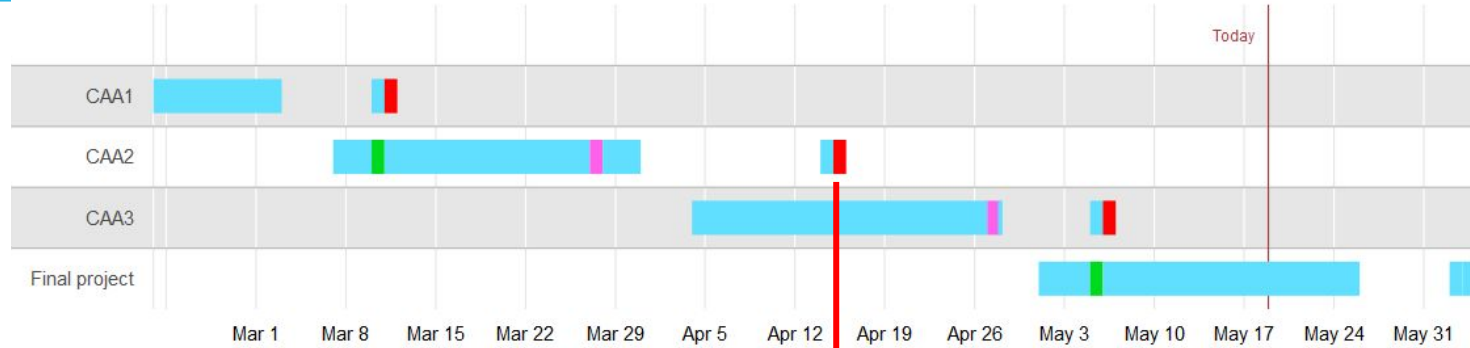
Informational feedback

Consecutive
non-submitted

One activity
non-submitted

Submit activity

Nudgeting system
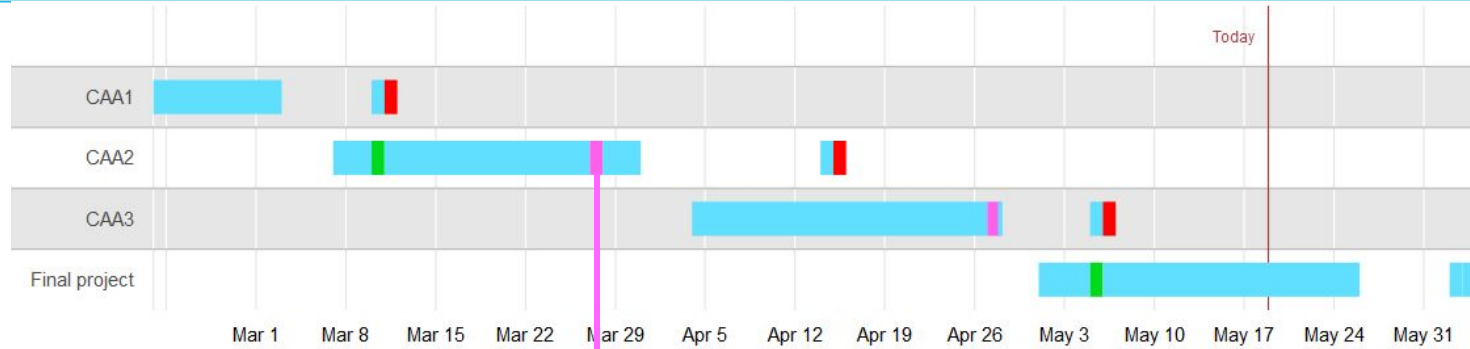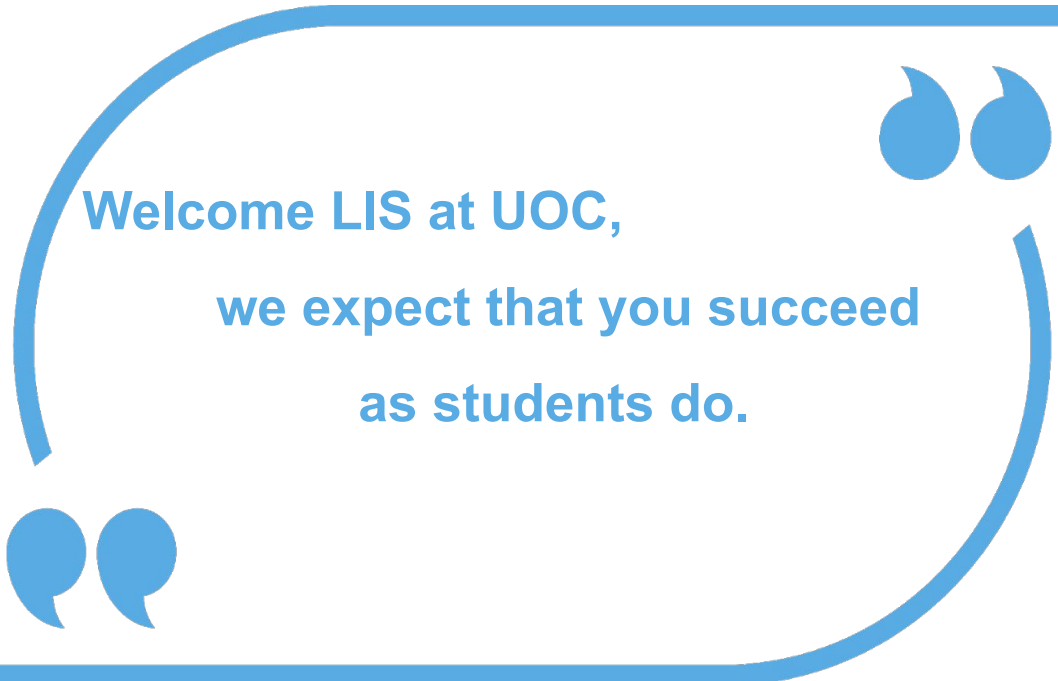
Welcome LIS at UOC,

we expect that you succeed

as students do.

Thank you for your attention

David Bañeres, Abdulkadir Karadeniz,
Ana-Elena Guerrero, M. Elena Rodríguez

Daniel Knox
Assistant Provost for Academic Planning and Student Success
State University of New York System (SUNY)

Unleash the Bots!   Robotic Process Automation Pilot at the State University of New York

Dan Knox, Assistant Provost for Academic Planning & Student Success, the Office of the Provost, State University of New York

Agenda

- The State University of New York (SUNY) Context
- Robotic Process Automation Pilot Overview
  - UiPath Platform
  - Use cases
    - Cross registration
    - Data visualization
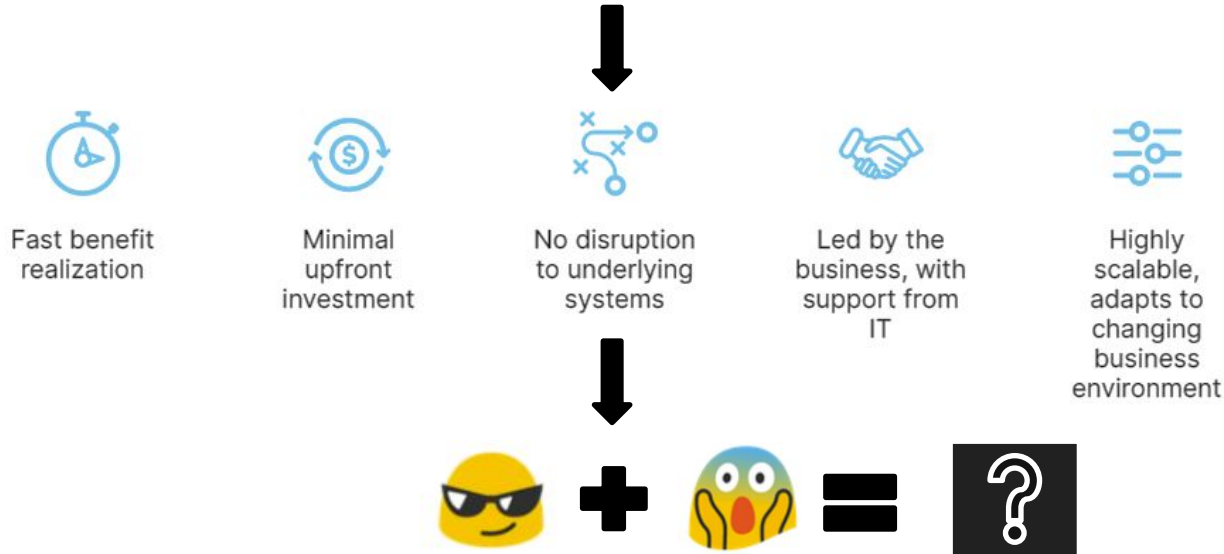- Opportunities & Caveats
- Discussion

SUNY Context

- 64 campuses
  - 30 Community Colleges
  - 13 Comprehensive Colleges
  - 7 Technology Colleges
  - 14 Doctoral Degree Granting Institutions
- Enrollment by Headcount (Fall 2018)
  - Undergraduate Enrollment: 424k
  - Community College Enrollment: 200k
- 90,000 faculty and staff
- 7,000 degree & certificate programs
- One Board of Trustees
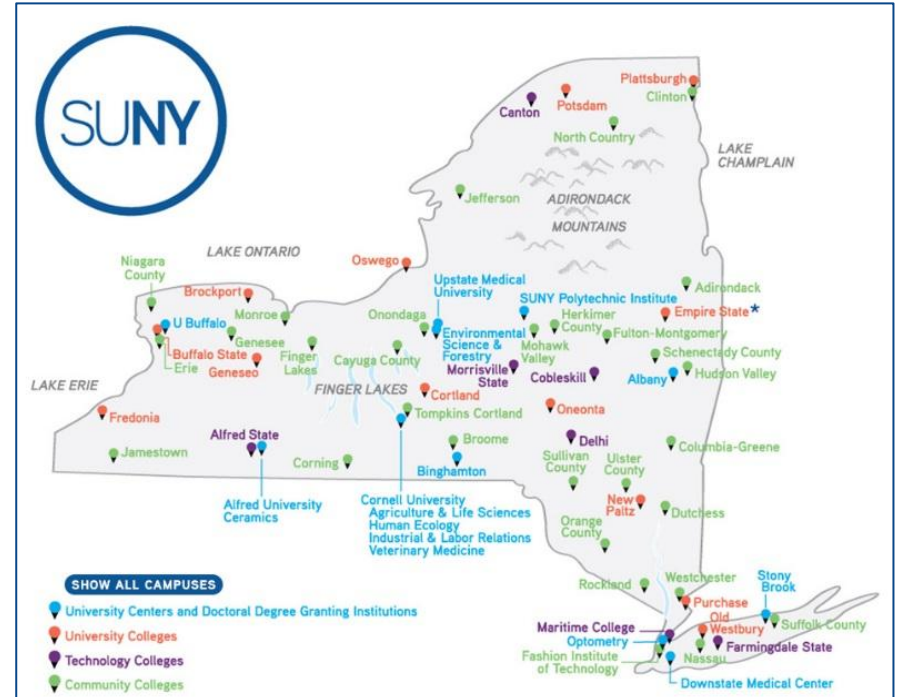
UiPath Platform

- Robotic Process Automation
  - Allows users to configure computer software (a "robot") to emulate and integrate the actions of a human interacting within digital systems to execute a business process.

Fast benefit realization	Minimal upfront investment	No disruption to underlying systems	Led by the business, with support from IT	Highly scalable, adapts to changing business environment

Use Case 1: Cross Registration

- Cross registration occurs when a matriculated student from one SUNY campus takes a course at another SUNY campus.

Student Request

Home Campus Approvals

Host Campus Review & Approval

Host Campus Registers Student

- Academic Advising
- Financial Aid
- Registration

- Staff member logs into system-wide cross registration application.
- Manually copies student data into the campus student information system
- About 10 minutes per transaction

Use Case 1: Cross Registration

- Results
  - Successful testing at a single campus using system CRX application and Banner 9.0
  - Accurate
  - Replicable
  - Process reduced to under one minute per transaction
- If scaled system wide, running this single process during spring semester 2019 would have saved 850+ hours of staff time

Use Case 2: Data Visualization

- As annual fall enrollment numbers are reported, institutional research staff members must analyze raw data, design and format tables and charts; and correct reporting errors to produce over 20 analytical tables and charts for reporting to SUNY stakeholders.

| Download Raw Data | Analyze Data | Produce Charts & Tables | Perform Iterative Manual Error Correction |

Use Case 3: Data Visualization

- Results
  - Process can now take raw data, perform analysis, create and format all needed tables and charts in less than a minute.
  - Avoids human error
  - Allows for easy updating if raw data changes
- This process saved over 80 hours of staff time and significantly improved accuracy.
- With this proof of concept, similar RPA modules can be applied to other data visualization tasks, such as graduation rates, and diversity analytics.

Opportunities

- Improve efficiency
  - Do more with less
  - Reallocate staff time to higher level tasks

- Identify inefficient workflows and establish alternatives

- Achieve greater consistency and replicability
  - Higher confidence in results

- Make work more enjoyable (?)
 - Automate the things we hate!

Caveats

- Political

- Technical
  - Relationship between automated systems and legacy systems may be problematic

- Security risks

- Institutional knowledge
  - Training and staffing. Who will fix the black boxes?
  - What is in the black boxes?

Automation and its Discontents

- Beware the Black Boxes!
  - Nuclear weapons testing[1]
    - "[Following the nuclear testing ban in 1992], with explosions taking place on hard drives and in virtual reality chambers, how much harder will it be for weapons scientists to confront the destructive power of their work and its ethical implications?"
    - The younger generation of weapons scientists did not write their own code. "Those who only know the top layer of programs feel powerful because they can do amazing things. But they are dependent on those who can go deeper."
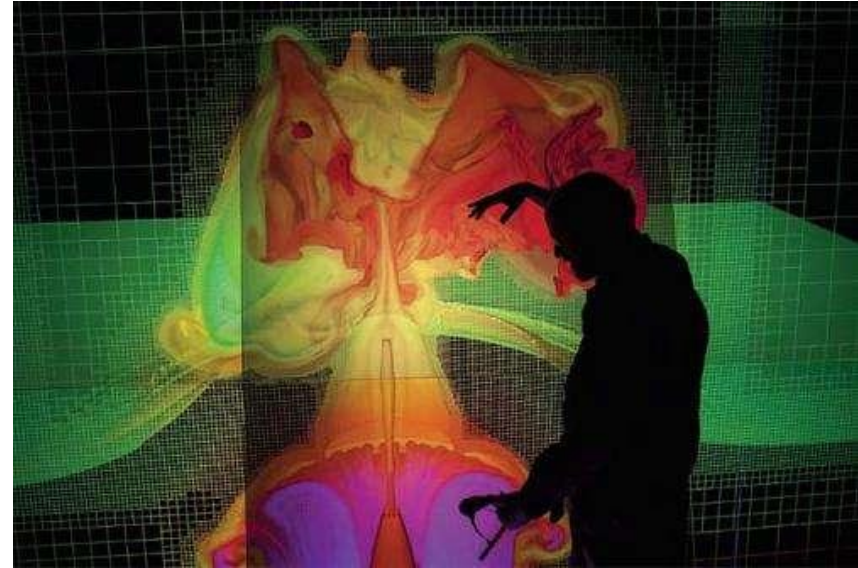
[1]Turkle, S. (2009). *Simulation and its Discontents*. The MIT Press

Alejandro Jara Weitzmann
CEO & Co-Founder
Smart Republic

New Frontiers: SmartCampus project

NGBD May 2020

Alejandro Jara Weitzmann

CEO and Co-Founder

Smart Republic

Index

1. New challenges for EdTech and Sustainability Taxonomies: the 2030 Agenda pre-Covid

2. Regulated and non regulated Sustainable Taxonomy

3. A new tool: Smart Campus

4. Taxonomies, Skills and Competencies

5. New Frontiers in a Post Covid World: An Integrated Health/Sustainable Agenda

1. New challenges for EdTech and Sustainability Taxonomies

1. The Sustainable Taxonomy 2030 Agenda: goals and key topics
    1. By activities and types of projects
        - Industrial sectors
        - Macro (Mitigation) and Micro (Adaptation)
        - Education and new competencies
        - Users and clients
        - Financial sector
        - Project Typologies

2. Regulated and non regulated Sustainable Taxonomies

1. Regulated
    1. Institutional actors
    2. Multilateral (UN, IPPC, UNESCO, UNEP, WB)
    3. Regional (European Union, etc)
    4. Governments and countries
    5. Sector associations
2. Non regulated
3. See Diagram: The Taxonomy Curve (Pre – Post Covid)

2.a Taxonomy consensus and benchmarking

► Since COP 21 and the Paris Accord in 2015, much effort has been devoted to building a common definition and classification of sustainable activities.

► The EU Technical Expert Group (TEG) has interacted with and significantly influenced the other institutional working groups on a Sustainable Taxonomy, focusing on green financial criteria and project development for SDG implementation, working with the World Bank Group, in dialogue with the UN IPCC panel for scientific backing of COPs and with the private sector. This process can be defined as "Taxonomy Consensus" building.

► A shift of capital flows towards more sustainable economic activities has to be underpinned by a shared understanding of what 'sustainable' means. A unified EU classification system - or taxonomy - will provide clarity on which activities can be considered 'sustainable'. It is at this stage the most important and urgent undertaking of this Action Plan. Clear guidance on activities qualifying as contributing to climate change mitigation and adaptation, environmental and social objectives will help inform investors. (EU Action Plan).

2.b Review of Taxonomy Models for Sustainability and SDGs

► A preliminary review shows that there are several Taxonomy Models for Sustainability under development at this stage (since COP 21 and the 2015 Paris Accord on Global Warming):

► The **European Union** Directive on a Sustainable Taxonomy and the Technical Expert Group (TEG) ; The European Commission's Technical Expert Group on Sustainable Finance (TEG), takes guidance from existing EU legislation, policies and goals ; EU Action Plan: Financing Sustainable Growth , 2018 ; in line with the UN 20/30 agenda and the UN Paris Accord, 2015 ;

► The work of the **European Central Banks**, their Greening the Financial System, in line with the former ; the World Bank Group, and its framework and dedicated knowledges platforms ;

► The holistic framework proposal by **United Nations** agencies, such as UNEP (UN environment program), the UNESCO approach on AI and new technologies applied to education (in the context of two approaches : the Readiness Index approach vs. Maturity approach) ; and the linkages to the **UN IPCC** panel;

► **Private sector** : The impact investing frameworks for private investors (Capital Markets Associations (ICMA), Corporates, private investment banks, VCs, mitigation projects) ; such as Green Bonds Guidelines (and more recently, Social and Sustainable Bonds) ;

► **Academia** : the Institute for Climate Economics, I4CE, Paris, France; The Grantham Institute from LSE, London, UK; and the Earth Institute Center for Environmental Sustainability at Columbia University, USA ; Nathu Puri Institute for Engineering & Enterprise, London South Bank University ; and University College London, Bartlett School of Construction and Project Management ; Institution of Civil Engineers, UK.

3. A new tool: Smart Campus taxonomic modeling

- A new tool jointly developed by Dxtera and Smart Republic (POC level, since September 2019)

- This tool is based on a website developed by and for MIT students (Crosslinks) to help them know what to learn, when to learn it, and where to find the necessary resources. We have reskinned it into a tool for designing and implementing sustainable development projects. Our initial users will be university students, recent graduates and young leaders. It currently provides dynamic and flexible knowledge on sustainability and planetary issues through our Multi-Taxonomy Model Approach, to complement formal curricula.

- To optimize knowledge paths and better understand today's challenges and how to conceive, manage, and measure the impact of, projects to achieve the Sustainable Development Goals of the United Nations 2030 Agenda we will augment the resource with automatic translation functionalities and artificial intelligence grounded in Semiotics and Linguistic Anthropology

3.a The EU Sustainable Taxonomy approach

- The EU's six environmental priorities are:
  - Climate change mitigation
  - Climate change adaptation
  - Water and marine resources
  - Circular economy
  - Waste prevention and recycling
  - Pollution and healthy ecosystems Source : ibid
- The SC Navigation system and other taxonomies
  - UN SDGs
  - World Bank Project Types
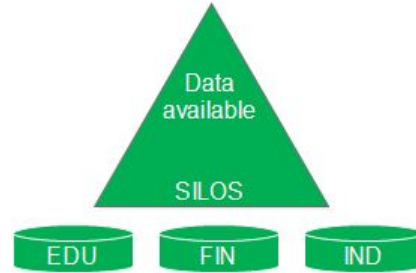 - Financial sector
  - Users and clients typology

3.b Gaps in the Knowledge Sustainable Models

► From an academic point of view, this new Sustainable Ed Tech framework can help fill a gap reported by Paul Mansell, Simon P. Philbin and Anna Plodowski. Their core argument is that "measurement of SDG impacts at project level is not currently working despite the endorsement of the SDGs by all the world's governments.

► The problem stems from a fundamental misunderstanding of the interdependent relationship between business and society. The failure to appreciate this interdependence has led to sustainability being overlooked, both as a strategic opportunity for competitive advantage by firms and as a source of significant business risk. If businesses, and the projects that drive the changes needed, are to deliver their full part of SDGs by 2030, a new approach is needed ».

► Along the lines proposed by Michael Porter and more specifically regarding the SDGs and the potential for Creating Shared Value (CSV) and a Triple Bottom Line reporting process , these authors emphasize that: "The project management profession has a unique role to play in this transformation process by ensuring that projects' success is defined in the right way from the start, and that CSV opportunities are taken at all stages of the project lifecycle." WHY PROJECT MANAGEMENT IS CRITICAL TO ACHIEVING THE SDGs AND HOW THIS CAN BE ACHIEVED ; Authors: Paul Mansell 1, Simon P Philbin2, Anna Plodowski3, 2019.

► Porter, M. E. and Kramer, M. R. (2011). The Big Idea: Creating Shared Value, Rethinking Capitalism. Harvard Business Review Volume January-February.

4. Open/Flexible Taxonomies and Competencies

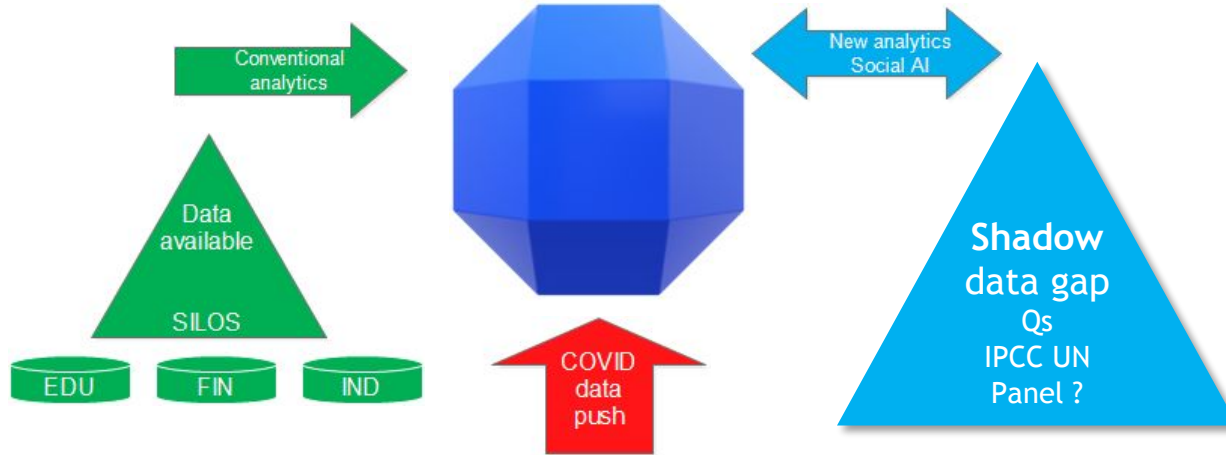A new Conceptual Architecture Approach and System Dynamics

- The Top of the Pyramid (top down approach)

SmartCampus expands the current taxonomy management and utilisation

Hierarchical Taxonomy Model → Open Dynamic Taxonomy Model

Global regulated taxonomy → Open semi-regulated Taxonomy

Real Data expanded with ⟷ Shadow Data

DIAGRAM DATA MANAGEMENT AND TRADE OFF ANALYTICS

The BOP approach and digital disruption of labour market (Horizontal Open Approach)

5. New Frontiers in a Post Covid World: An Integrated Health/Sustainable Agenda

- Impact on Ed Tech challenges
    - On formal regulated education systems
    - On informal education and training
    - Impact on industrial modeling
- Impact on Sustainable Agenda 2030
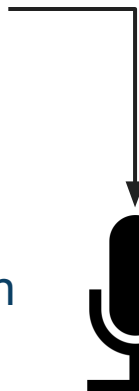- The Future of Competencies: Expanded Vision for a Fast Tracked Digital Transition
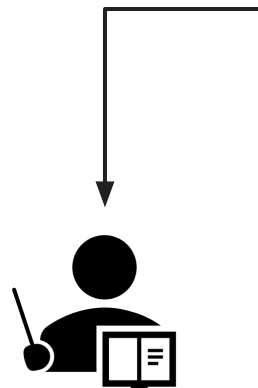
Annexes

Discussion and Questions
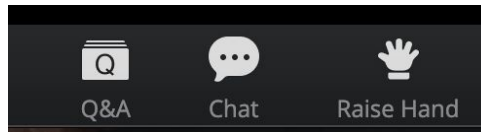
Raise hand

Ask in the Q&A

You ask your question

Facilitator will ask your question for you
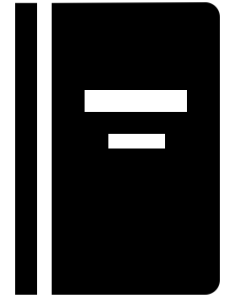
Discussion

NGBD Series Sessions and Next Steps

- All Webinar recordings, papers, community discussions, and details to be posted on the NGBD Site.

- Summary papers to be published

- Questions or comments to info@dxtera.org

Unlock your digital information. Unleash *their* potential.

Dale Allen, PhD
President and Co-Founder
dallen@DXtera.org

NGBD Symposium Series Opportunities

- Next Generation Education Systems
  - EagleApps Community & Implementation Studies
  - DigiOne
- Exploring New Frontiers
  - Smart Campus
  - Swedish EdTest
- Comparative Taxonomy Management
  - Open Skills Stack Alliance
  - Learning Outcomes Management (@ UOC)
- Global Education Coalition with UNESCO

Upcoming NGBD Events

- Israel Edtech Week,Tel Aviv, Israel - September, 2020
- EDUCAUSE - Boston, MA, USA - October, 2020
- OLC Accelerate - Florida, USA November, 2020
- Learntec - Karlsburg, Germany - January, 2021
- MindTrek - Tampere, Finland - January, 2021
- UNESCO Mobile Learning Week - March 2021
- European Digital Education Congress - Berlin, Germany - April, 2021
- Next Generation By Design Symposium - TBD - May, 2021

Thank you!
Visit us at DXtera.org