UiO : Universitetet i Oslo

Statens vegvesen

Autosys vehicle

«From failure to success»
2003 - 2021

Experiences IT and manageme



Leadership dilemma when hierarchies fall

Erik Johannessen

April 27, 2022

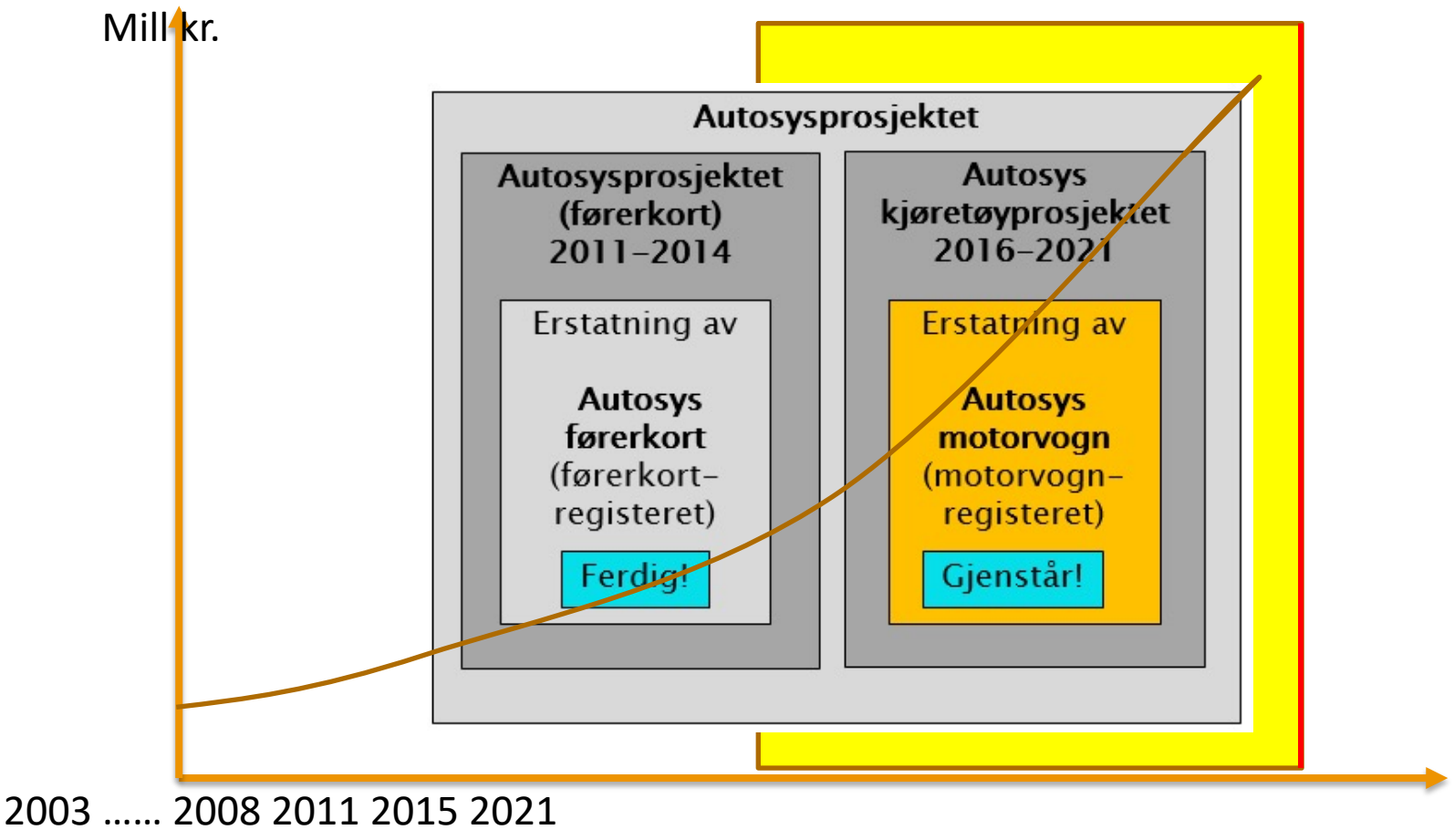
Statens vegvesen

Theme

- History
- A market development perspective, the development of the computer economy
- Corporate governance and anchoring
- Organization and culture building
- Leadership and management

Background and history

Autosys portfolio - Project framework NOK 2.1 billion 2021. (St. Mld . No. 1 2016 / State budget))



Statens vegvesen

Many predictable and unpredictable obstacles



From slaughter to success

Autosys



IT-smell for Vegvesenet

Sprekker med flere hundre millioner kroner.

2013 2021



Slakter kjøretøyregister etter milliardregning

Årelang IT-skandale ble snudd til suksess

Henning Carr Ekroll og Kjetil Blom Haugstulen (foto)

Prosjektlederen for Veivesenets store IT-prosjekt mener at andre offentlige digitalsatsinger kan lære av det de har vært gjennom.



De siste årene har det skjedd en stille revolusjon i kjøps- og salgsprosessen av biler, både nye og brukte. Der man før måtte fylle ut og sende papirdokumenter, kan biler nå skifte eier på sekundet gjennom Veivesenets digitale løsninger.

– Nå går alt digitalt, som registrering, salgsmelding og forsikring. Det er langt smidigere og mer effektivt enn før. Vi har nok spart minst to årsverk på dette, om jeg skal gi et veldig forsiktig anslag, sier Lars Erik Presterud, konsernleder for bilforhandleren Erik Arnesen.

Dersom du har vært innom en bilrekvisitabutikk, har du kanskje merket en an-

FAKTA

Autosys

Et omfattende digitaliseringsprosjekt i Statens vegvesen. Startet i 2003 og skulle da bytte ut det gamle motorvognregisteret med samme navn. Dette har røtter tilbake til 1981.

Inneholder informasjon om ca. 11 millioner kjøretøy. Tilbyr tjenester i flere kanaler

millioner kroner. Siden har både omfang og kostnader økt kraftig.

Når siste del av prosjektet nå ender med å koste 950 millioner kroner, er det likevel *mindre* enn kostnadsrammen på 1,2 milliarder som Stortinget godkjente for fem år siden. Totalt er det brukt rundt 1,8 milliarder kroner siden 2003.

– Jeg vil definere det som en ubetinget suksess. Vi har holdt oss til den planen som ble lagt i 2015 og leverer i henhold til omfang og budsjett. Vi har fornøyde brukere og har lagt til rette for at dette kan videreutvikles basert på behovene brukere har, og det som måtte komme av eventuelle endringer i fremtiden, sier han.

Transport og kommunikasjon Vei

Milliarder kroner i samfunnsnytte

Pressemelding | Dato: 10.02.2021 | Nr. 19/21

– Autosys er et av de større IKT-prosjektene i statlig regi. Med dette systemet har vi fått en moderne løsning for å håndtere data om alle kjøretøy og førerkort. Dermed er hverdagen blitt enklere for forbrukere, for bilforhandlere, og for etatene som administrerer kjøretøyparken. Samtidig sparer samfunnet over seks milliarder kroner. Det kaller jeg en digital suksesshistorie, sier samferdselsminister Knut Arild Hareide.



Digitalt førerkort er bare en av mange nye digitale tjenester som har sett dagens lys de siste årene som en del av Autosys. Foto: Edvard Andersen / Samferdselsdepartementet

De siste årene har det skjedd en stille digital revolusjon for alle som har, eller arbeider med kjøretøy. Sakte, men sikkert, har det nye førerkort- og kjøretøysystemet Autosys blitt rullet ut, leveranse for leveranse gjennom seks år. Til sammen utgjør det nye systemet grunnlaget for Statens vegvesens selvbetjeningsløsninger, bransjeløsninger, og saksbehandlerløsninger innenfor trafikant- og kjøretøyområdet. Blant annet bidrar det til kjøp og salg av kjøretøy, omregistreringer, bompenger,

Regjeringen.no



Creates further expectations as a role model / best practice also in management

The systems are becoming more and more integrated and distributed. The systems become central c in the meeting with the customers.

points to the central challenge: Corporate Governance

Statens vegvesen

Autosys vehicles

2014

Riksrevisjonen

Fra årets Dokument 1

Office of the Auditor General of Norway

Et av hovedfunnene:

Mangelfull styring av flere store prosjekter i forvaltningen

- Viktige prosjekter – flere med merknader tidligere
  - modernisering av ikt i arbeids- og velferdsetaten
  - Arbeidsdepartementets forberedelse av ny a-ordning (for arbeidsgiverrapportering om inntekts- og arbeidsforhold)
  - Autosys-prosjektet i Statens vegvesen (kjøretøy- og førerkortregister)
  - Nasjonalt helseregisterprosjekt
- God planlegging og oppfølging viktig for å oppnå gjennomføring med forventet kvalitet, tid og kostnad



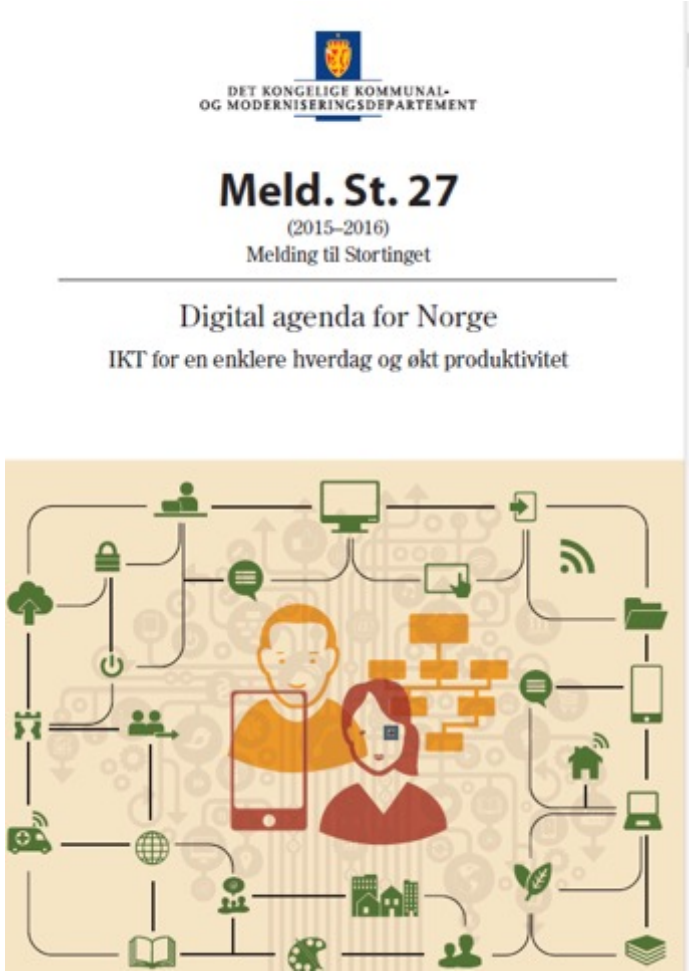
9

EJ

Statens vegvesen

Contribution to fulfilling the Government's intentions

Autosys vehicles



Autosys vehicles have helped meet the Government's main priorities:

- ***The user in the center*** through involvement, services that are perceived as coherent and holistic….
- ***ICT is a significant input factor for innovation and productivity*** through the efficient use of ICT, which strengthens the competitiveness of business and industry and increases society's overall productivity….
- ***Strengthened digital competence and participation*** through, among other things, that digital services should be easy to understand and easy to use….
- **Effective digitization of the public sector** through professional planning and implementation, risk reduction and profit realization. The market is used when appropriate. Common solutions used in the off sector

Into a new computer-driven economy

post-war period → 90s

E - ready C4 integration data- economy

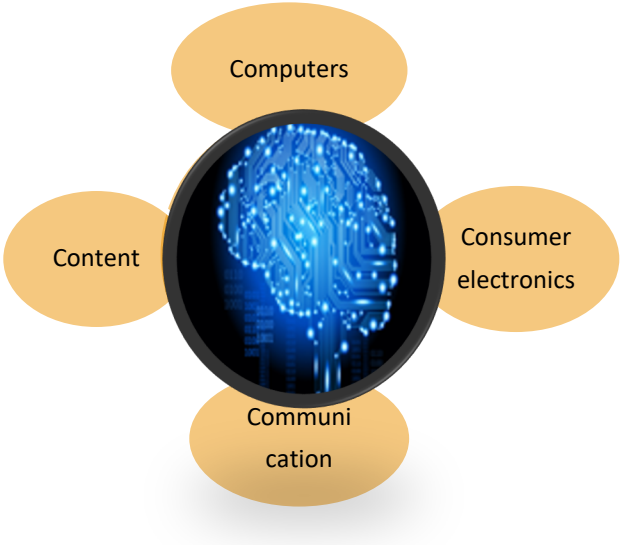
Nano-tec



Traditional
Marketing mix
Supplier driven



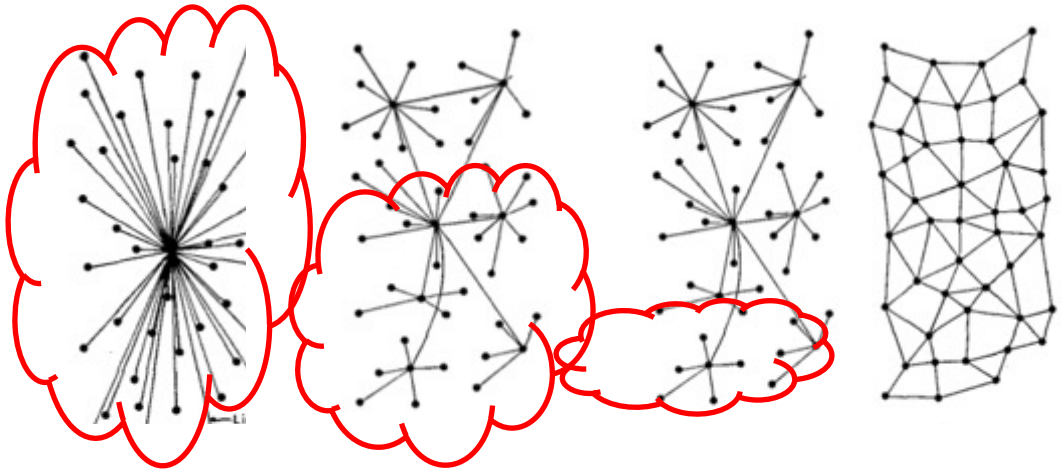
Customer driven
Marketing mix



Customer and Data Driven
Marketing mix

Autosys vehicle`s life cycle

1980… .. 2019 2021 2023 ?? (5G)



Centralized Centralized and integrated Decentralized Distributed

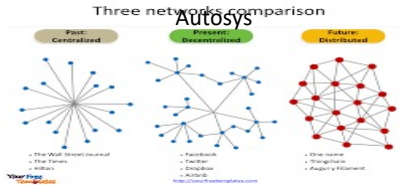
Traditional centrally controlled development and further development of software. Vertically controlled. Central power.

Central Integrated Solutions. Partially shared power. Requires good interaction.
Vehicle portfolio

Decentralized solutions that integrate several actors. Shared power. Multiple TTPs . APIs . Finn.no, NAF.no, TFF, Bilberging

Shared data. Usersnear computing . Distributed databases. AI. Decision support. Block chain . IoT

Autosys



TTP (trusted third party)

But …… Agile are more than interdisciplinary groups

Statens vegvesen



Flexible flat organization is spreading as an organizational approach

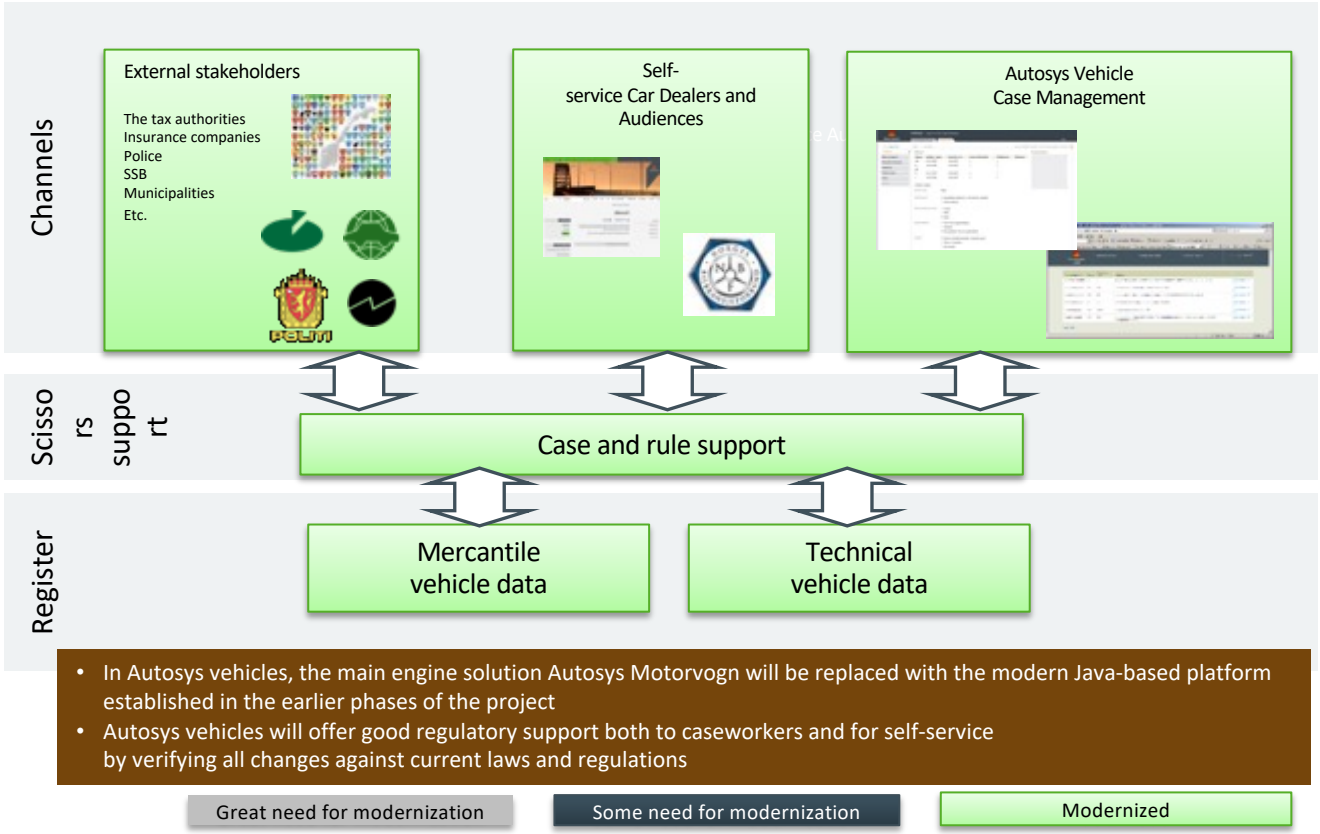
Statens vegvesen

The vehicle journey - system development «a journey in time»



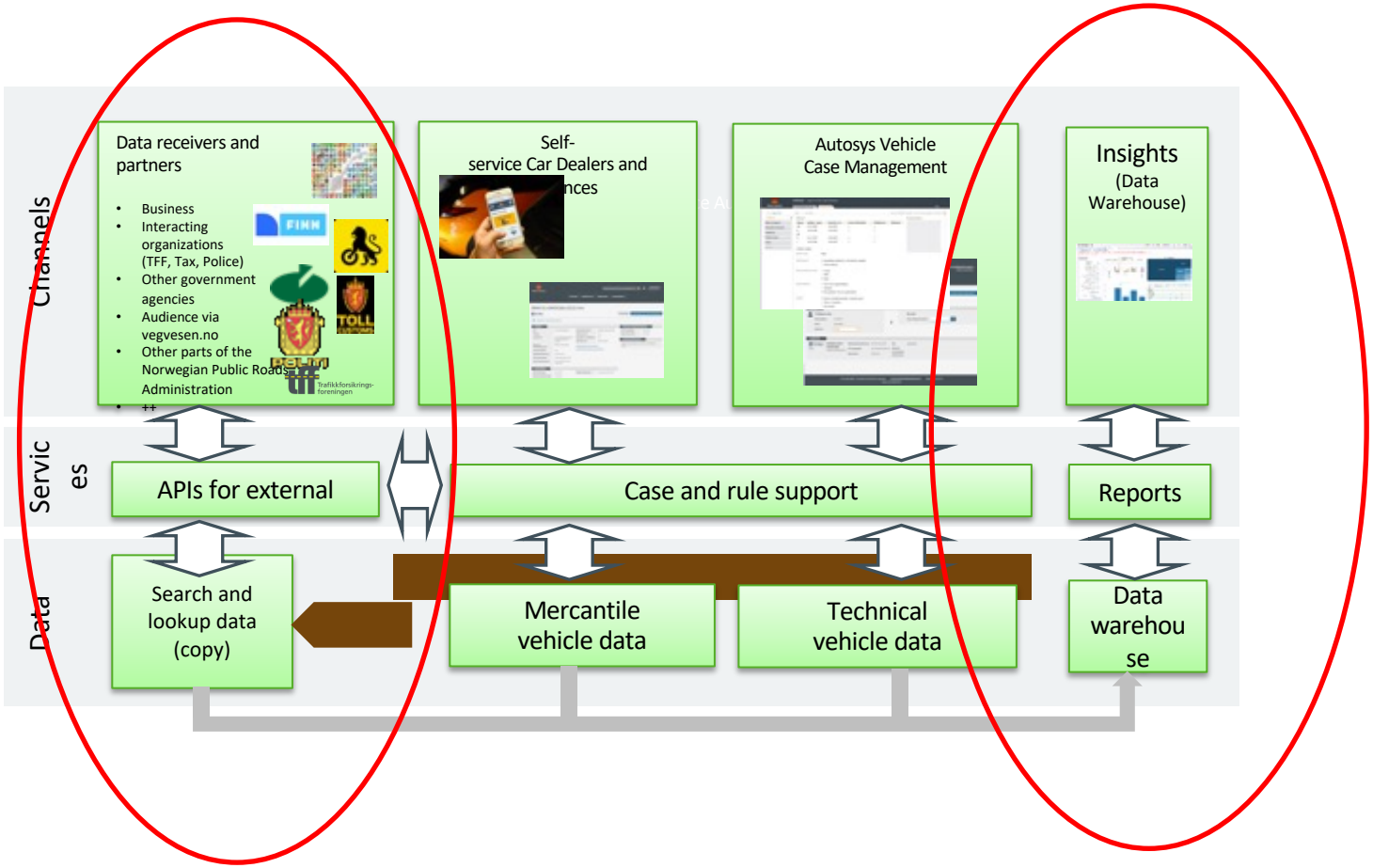
Statens vegvesen

Target image for overall architecture 2015 - Centralized professional solutions

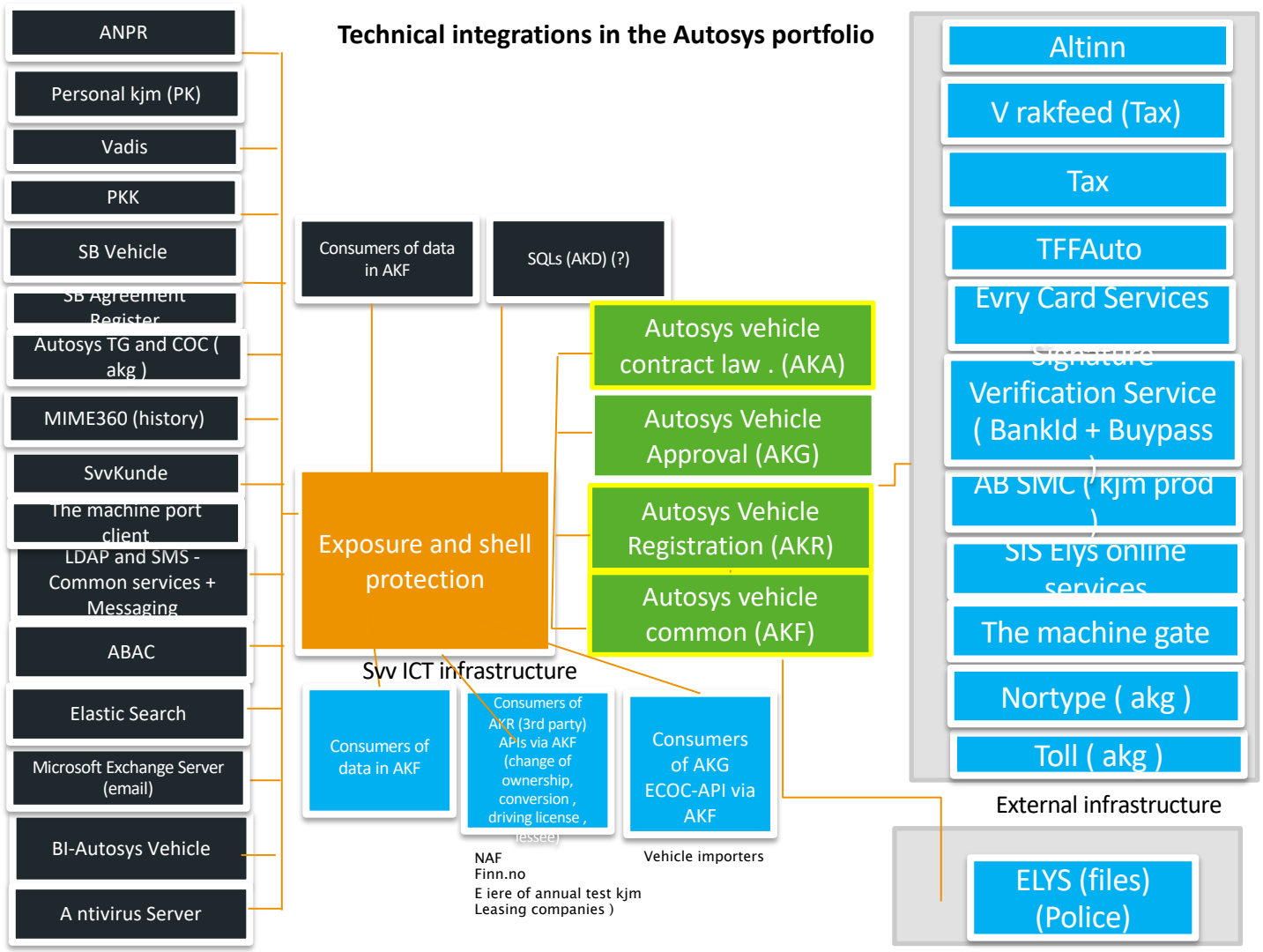


Statens vegvesen

Autosys vehicles - overall architecture 2021
Professional solutions integrated and with decentralized and integrated solutions

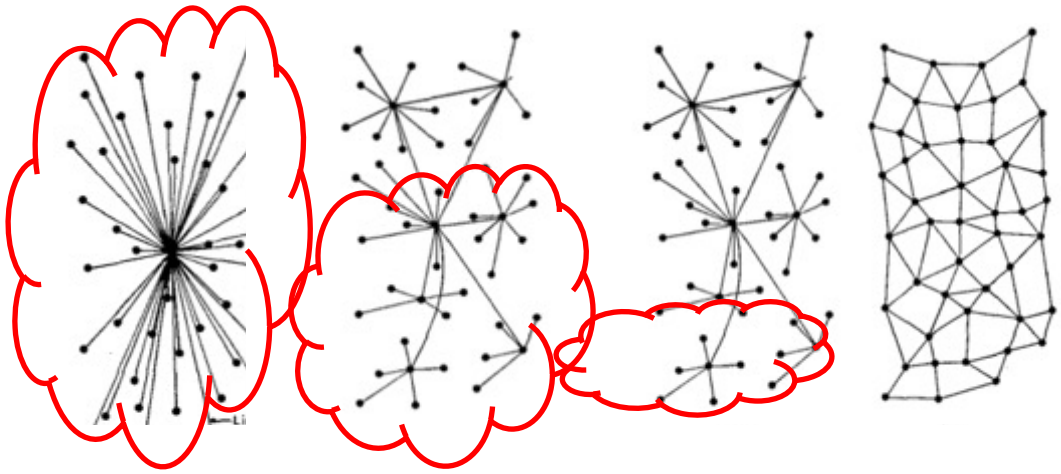


Technical integrations in the Autosys portfolio



Statens vegvesen

Autosys vehicle`s life cycle - a real digital transformation - but so what?



Centralized Centralized and integrated Decentralized Distributed

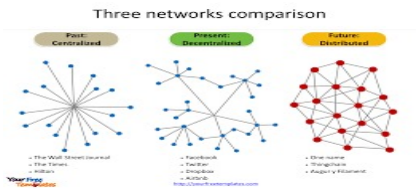
Traditional centrally controlled development and further development of software. Vertically controlled. Central power. Autosys

Central Integrated Solutions. Partially shared power. Requires good interaction. Vehicle portfolio

Decentralized solutions that integrate several actors. Shared power. Multiple TTPs . APIs . Finn.no, NAF.no, TFF, Bilberging

Shared data. Usersnear computing . Distributed databases. AI. Decision support. Block chain . IoT

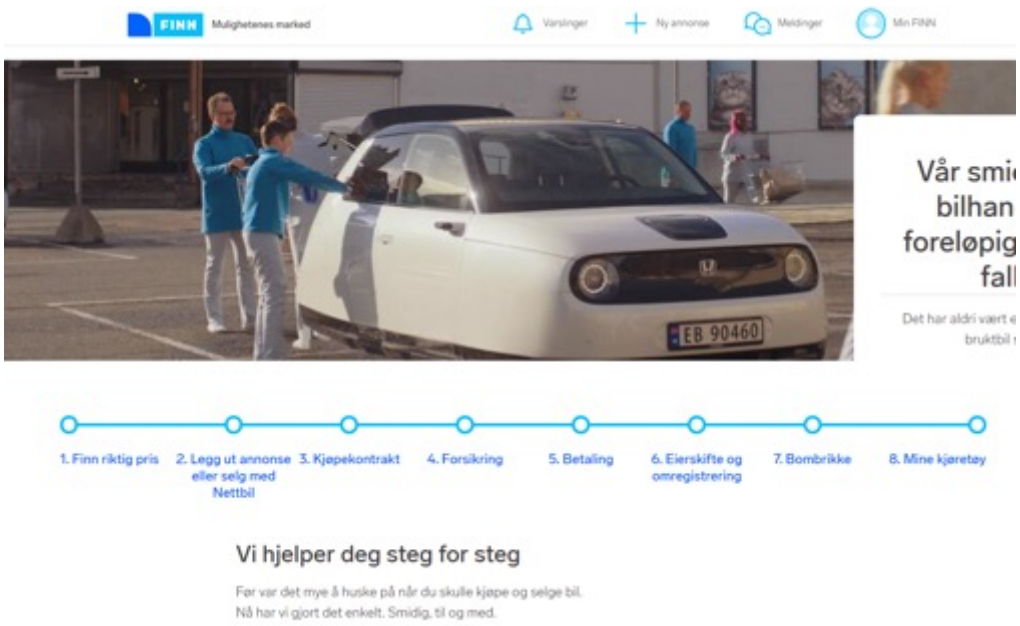
TTP (trusted third party)



To remain with the old structures of digital transformation is to turn back time and stay with the old. This risk will prevent further development

A data-driven economy through APIs and data exchange

Statens vegvesen



APIs , Finn.no and NAF.no have built "Autosys vehicles" into their own solutions so that the customer can carry out real-time transactions digitally. Value chain of approx. 7 min.

Example of computer economy
Efficient car salvage affects passability

Statens vegvesen

Vehicle data

tff Trafikkforsikrings-foreningen

Insurance data and vehicle data





Return data



Return data

The parties are working to find a solution this semester.

A target image , from manual to digital real-time information through real-time data exchange





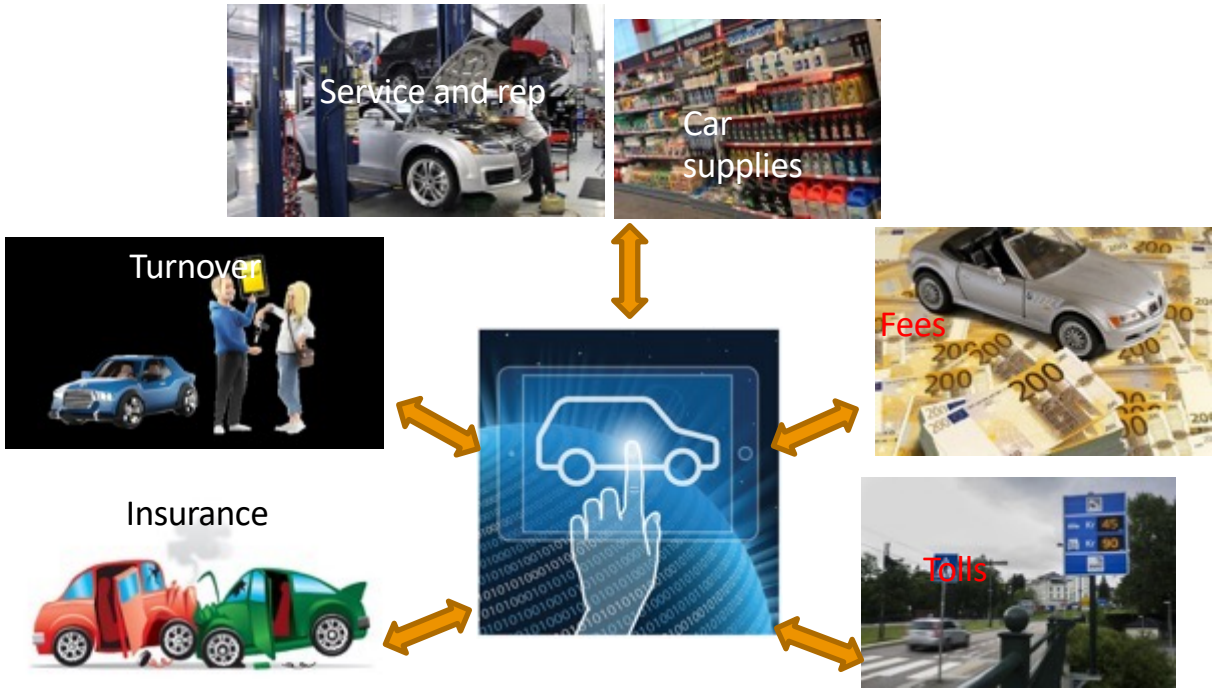




NHO
Logistikk og Transport

- Real-time traffic data
- Plan for Traffic Management
- Maintenance plan
- Predictable trips / trips
- Plan for public transport
- « Eyes on road »
- Route planning, time and accessibility
- Alternative routes
- Traffic congestion and queue
- Accidents
- Accessibility - speed
- Be and lead
- Natural events
- Historical data - statistics

Great value for the customer and the community



Autosys vehicle is the hub for a turnover of approx. DKK 300 billion annual

Statens vegvesen

Early reflections from my first time in SVV
gave some clues to follow ikke ..not unique in the project context



Learning



Competence



Authority



Management & Steering



Financial management



Optimism / underestimation



Contract

- 2014 - 2021

Statens vegvesen

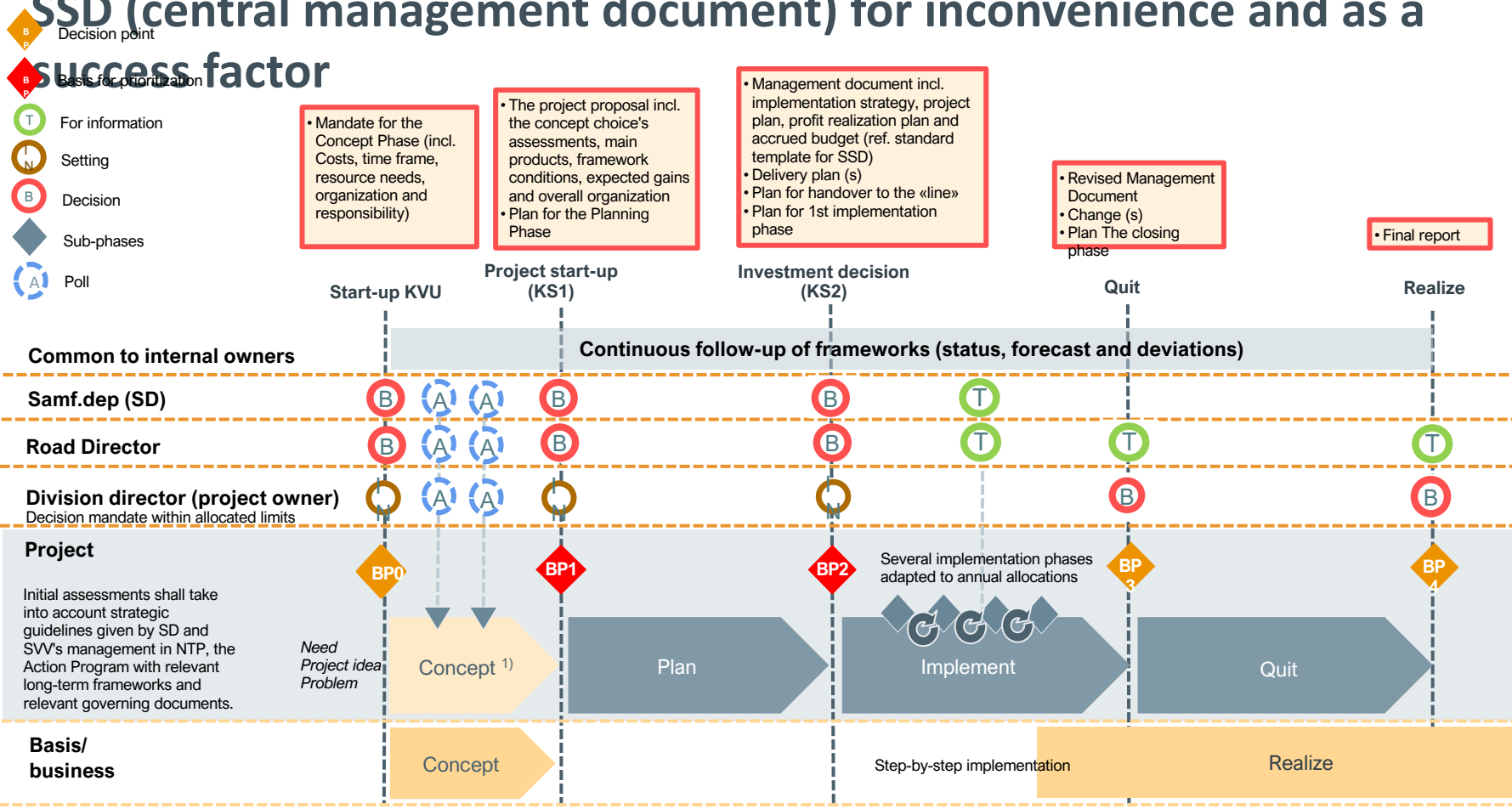


Success factors

- Clear goals and plan
- Best competence / training
- Follow-up and management
- Culture
- Early involvement of management and reception

Corporate governance model development projects> NOK 300 million

SSD (central management document) for inconvenience and as a success factor



1) In some situations, it will be appropriate to plan and carry out a major concept study as an independent project

Good processes where being challenged is positive so that the SSD is robust

Statens vegvesen

Establishment of basic prerequisites

- Establish the framework for the project with a thorough central management document / plan
- Establish the framework and knowledge for effective and relevant corporate governance
- Establish the financial management systems and mechanisms (CPI and SPI)

- Establish a balanced contract regime with Supplier
- Establish a conscious and desired project culture and staff the project with the best resources internally and externally from where it was needed.
- Establish a good agreed delivery plan and with useful values that can be retrieved

- Establish a good competition basis and evaluation model for choosing a Supplier so that the competition is fair and good (makes the suppliers good in the competition).
- Establish a good implementation model with a good reception system
- Establish a good process with market stakeholders and with adjacent agencies

- A good KS process based on other people's experiences and input
- Establish broad knowledge in the project about the content of the contract and had an active rela with and a desire to follow it throughout the contract period

Listen, Learn , Lead

Statens vegvesen

Governing documentation related to the State KS regime
A tool for success?



- Frames: purpose, target interface
- Project strategy: uncertainty, implementation strategy, contract strategy , organization / responsibility
- Project management: scope and changes, project breakdown, costs / budget, progress plan, profit realization, Qa

SSD is the basis for resource and service purchases and crucial for Leading in a targeted way

Statens vegvesen

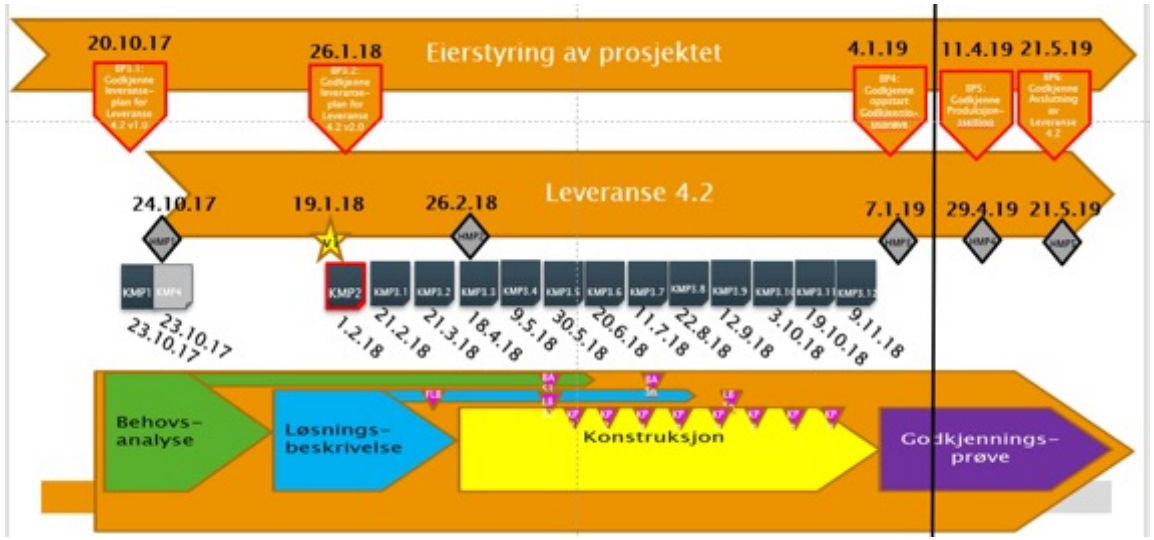
Comprehensive corporate governance throughout the process



Statens prosjektmodell over

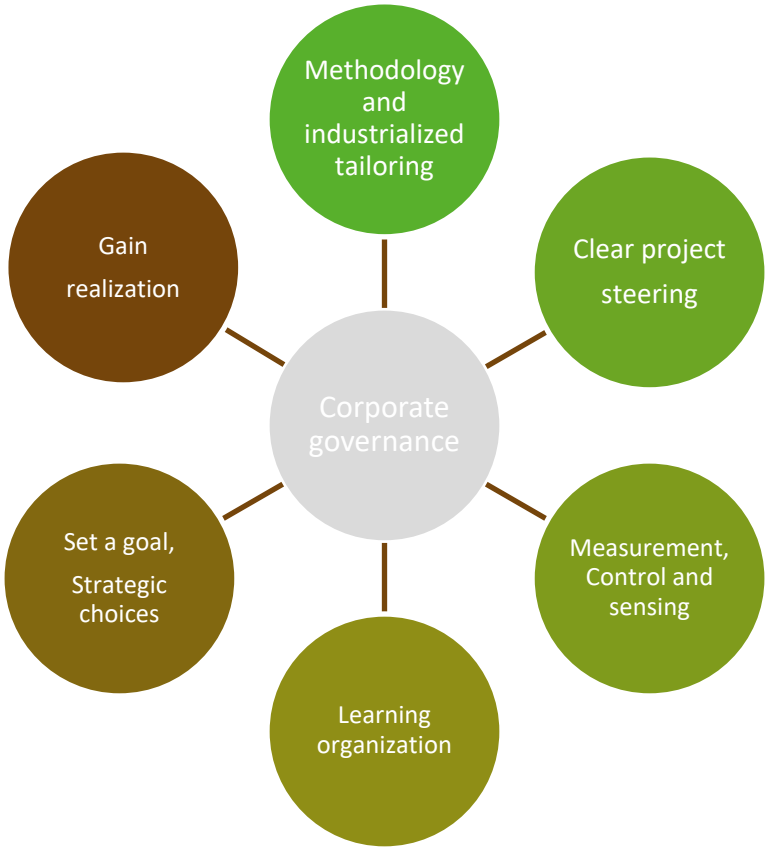
Prosjektmodellen pålagt Alternative initiativ(investering), kontraktvalg og overføring til Forvaltning DVV/gevinstrealisering

Alternative Investerings muligheter	Ide / KS/ Plan	Kontrakt/Oppstart	Gjennomføring	Forvaltning Drift, V&V



Statens vegvesen

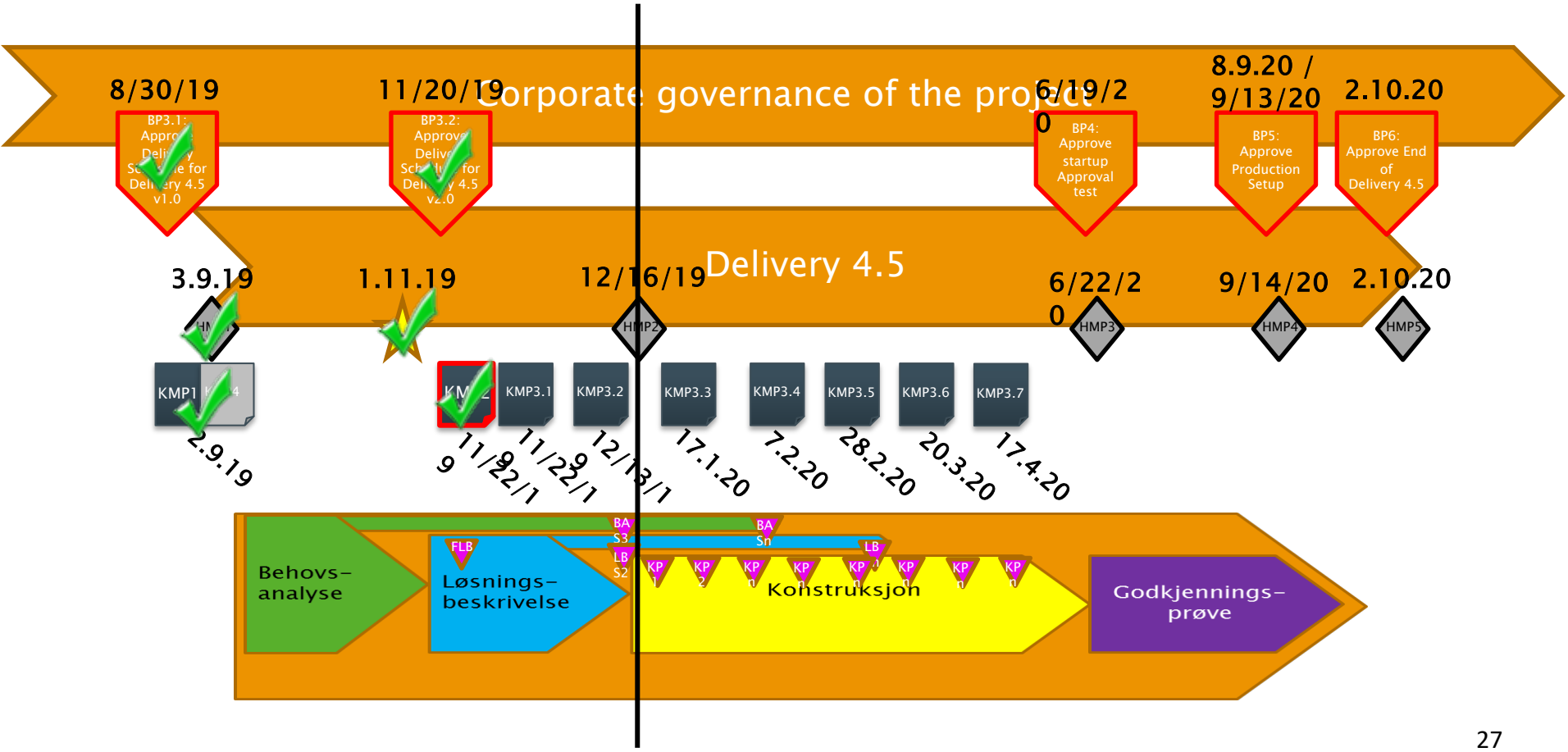
Corporate governance that takes care of strategic, tactical and financial follow-up



Managers / Owners must have knowledge and understanding that enables a complete corporate governance of projects and strategic initiatives

Sprint	Date
L4.5-0	25.11.19 – 13.12.19
L4.5-1	16.12.19 - 17.1.20 (+ 2u pga. Jul)
L4.5 -2	20.1.20 – 7.2.20
L4.5 -3	10.2.20 – 28.2.20
L4.5 -4	2.3.20 – 20.3.20
L4.5 -5	23.3.20 – 17.4.20 (+ 1h due to Easter)
L4.5 -6	20.4.20 – 8.5.20
L4.5-7	11.5.20 – 29.5.20
L4.5-SIS	2.6.20 – 19.6.20 (1.6 is the 2nd day of Pentecost)
GP – GT	22.6.20 – 4.9.20 (8h + 3h due to summer)
Prod.sett	11.9.20 – 13.9.20
GP – PP	14.9.20 – 2.10.20

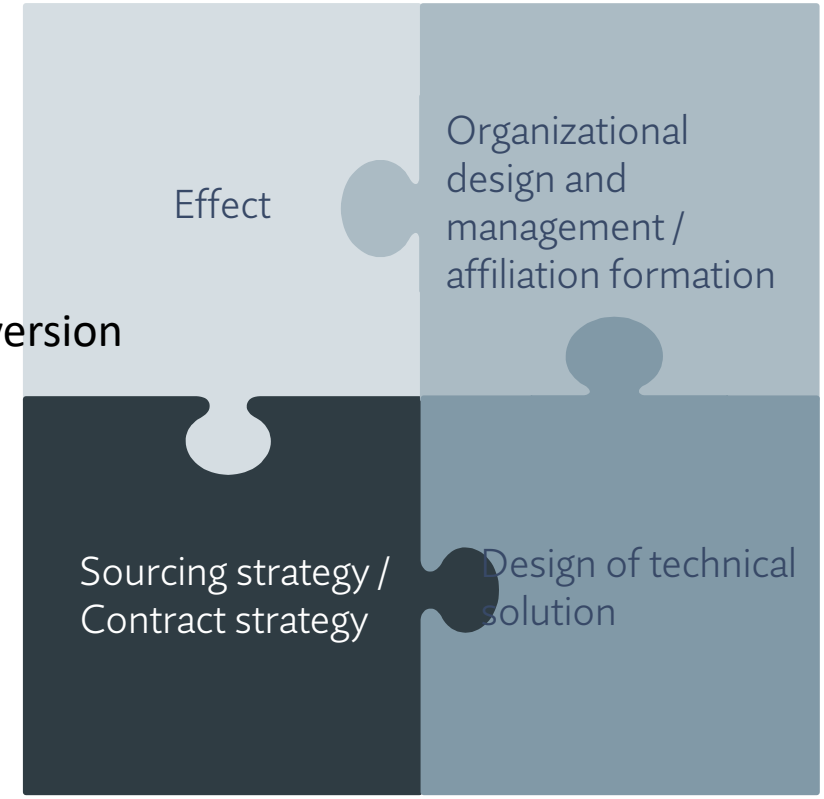
Timeline for Delivery 4.5 **v2.0**



Statens vegvesen

Everything must be seen in context

Management aspects
in the case of major conversion initiative



Flexible philosophy
Based
on the implementation.

Motive and purpose will always be in doubt

Statens vegvesen

Leadership dilemma when hierarchies fall? Men,….
Do the hierarchies really fall, and if so, what will happen then?

Some will always have and take responsibility, others will not.
Self-governing groups, when, for how long and with what result?
Always in need of clarifications and decisions!
Always conflicting interests

Man
nature

Turn the pyramids or tear down the pyramids, have we succeeded?
Hierarchy is the basis for an effective organization.

Organizational
Design and structur

Can ICT contribute to a flatter organization and more smooth development?

Flexible developme

Purpose

Statens vegvesen

Clear overall framework - purpose, requirements and main concept

- The initiative-triggering need for the establishment of the project is that the **technological platform** (software) on which the current Autosys Motor Vehicle is based is outdated and is approaching an "end - of - life ".

- A societal need to have a **digital " first choice "** for services related to the road user and vehicle area, where modern solutions for driver's licenses (delivered in previous projects) and vehicle registers with associated functionality are central.

- It is important for the Norwegian Public Roads Administration to meet the government's strategy for continued **renewal and streamlining** of the public sector, which includes key requirements for ICT solutions in the public sector.

Endangered solutions are replaced so that the basis for digitization (digital first choice) and efficiency in the public sector can be implemented.

Ref. NTP`s , Digital first choice, Sundvollen declaration, perspective message, etc.

Statens vegvesen

Performance targets as a basis for management - cost management, time- boxing , product queue and cut list under a flexible philosophy!

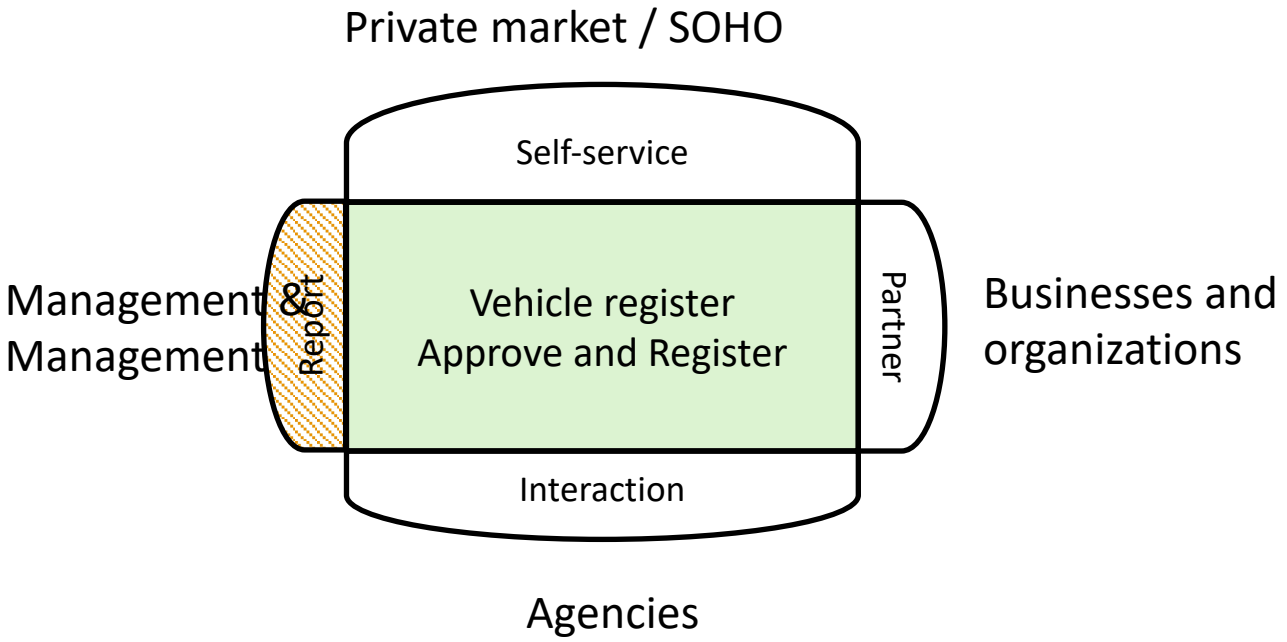
Performance targets (in order of priority)	Concretization
Cost	Autosys Vehicles shall be realized within an overall total cost framework and at the same time within the individual delivery framework. The cost target has priority 1 over the other profit targets.
Scope	The project will deliver the solution with the described functionality for each delivery according to the project and product degradation structure. If priority performance targets are deviated from, the scope must be adjusted for relevant functionality according to the cut list.
Time	Autosys vehicles will be fully put into production during 2021. Deliveries are set in the schedule. Deviations in time will be governed by cost and scope.

Cost, scope, time will mutually influence each other. Succeeding at the project means being able to balance these goals.

Autosys vehicles

"Channel orientation" as a basis for "manageable" delivery division and control (splitting of the elephant)

Autosys vehicles consist of the following parts:

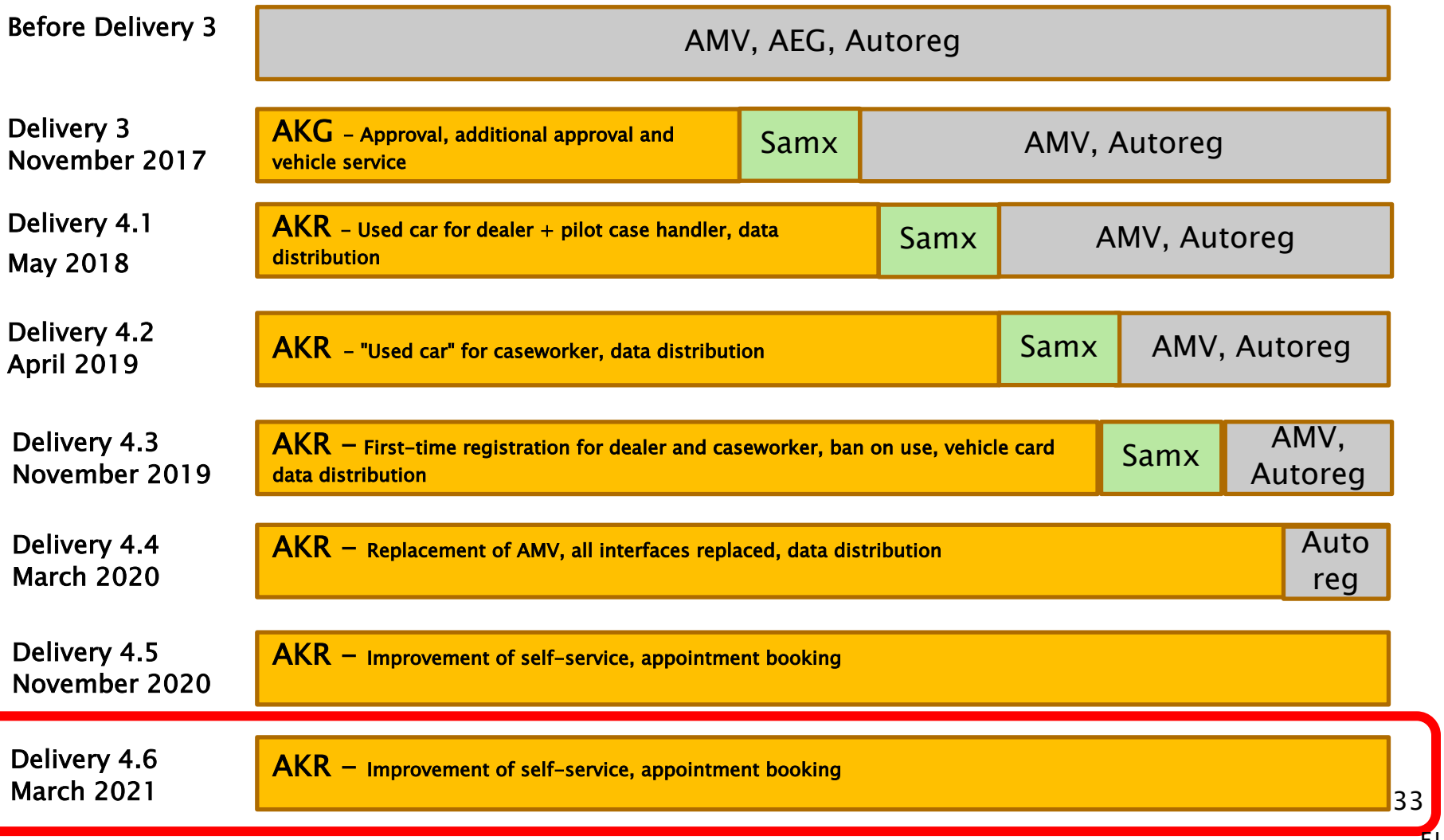


Autosys vehicles will be used by several channels for handling and managing vehicle data and give rise to value chain integrations

Statens vegvesen

Autosys vehicles

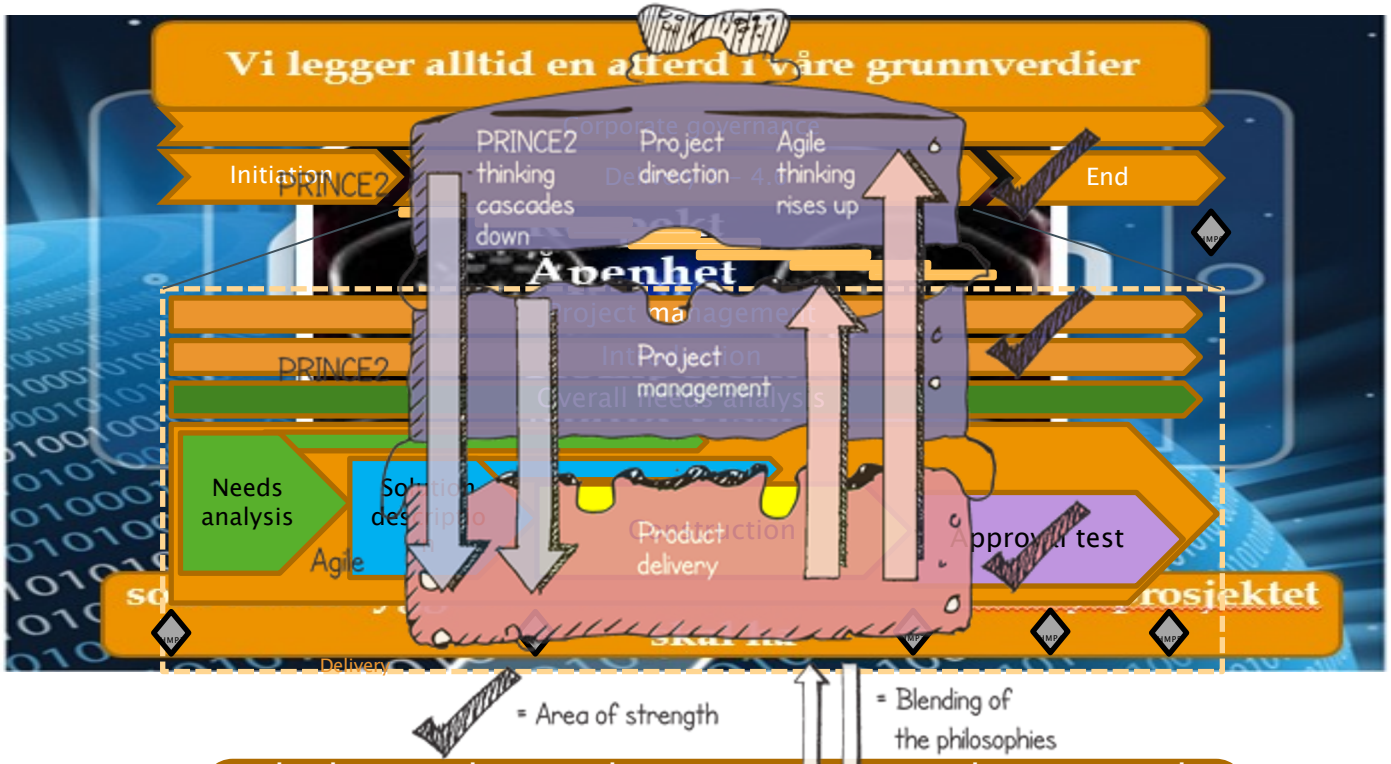
Delivery schedule



EJ

Statens vegvesen

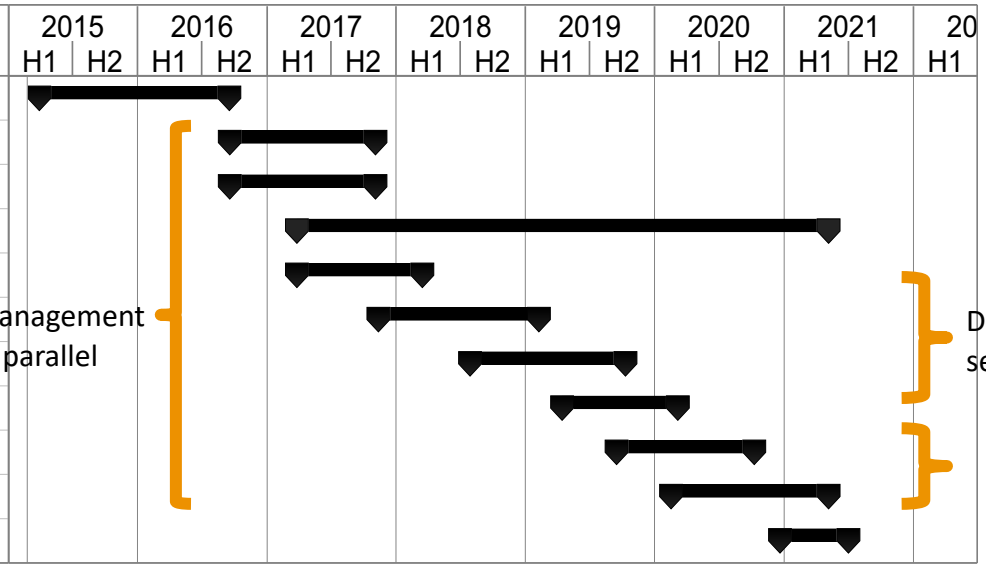
Implementation model for Autosys vehicles - integrates philosophies and models



The basic values in the project permeate how we work according to implementation model. And – they agree well with typical agile behavior: cooperation, self-organization, customer focus, power of attorney, trust

Overall progress plan

ID	Task Name
1	**Initiering**
19	**Hovedleveranse 3**
20	**Leveranse 3**
32	**Hovedleveranse 4**
33	**Leveranse 4.1**
47	**Leveranse 4.2**
61	**Leveranse 4.3**
75	**Leveranse 4.4**
89	**Leveranse 4.5**
103	**Leveranse 4.6**
117	**Avslutning**



Establishment of manageable partial deliveries in cost, scope and time so that reassessments can be made without too great consequences.

Autosys vehicles

The step back:

Early reflections from my first time in the project gave some clues for approach



Learning



Competence



Authority



Management & Steering



Financial management



Optimism / underestimation



Contract

Leadership - Values - Culture

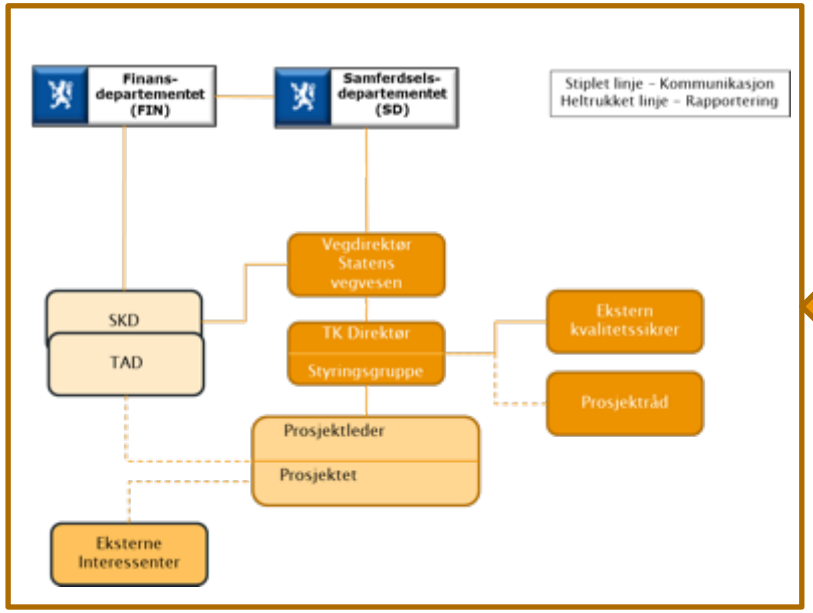
Statens vegvesen

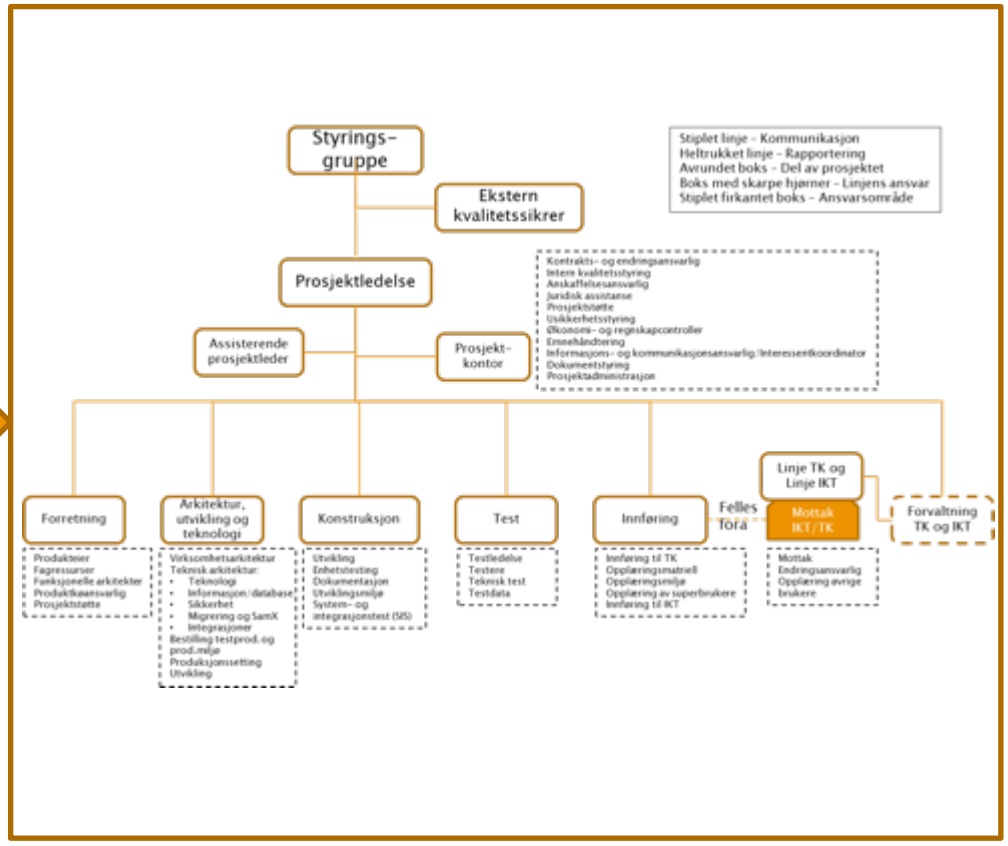
Autosys vehicles



Statens vegvesen

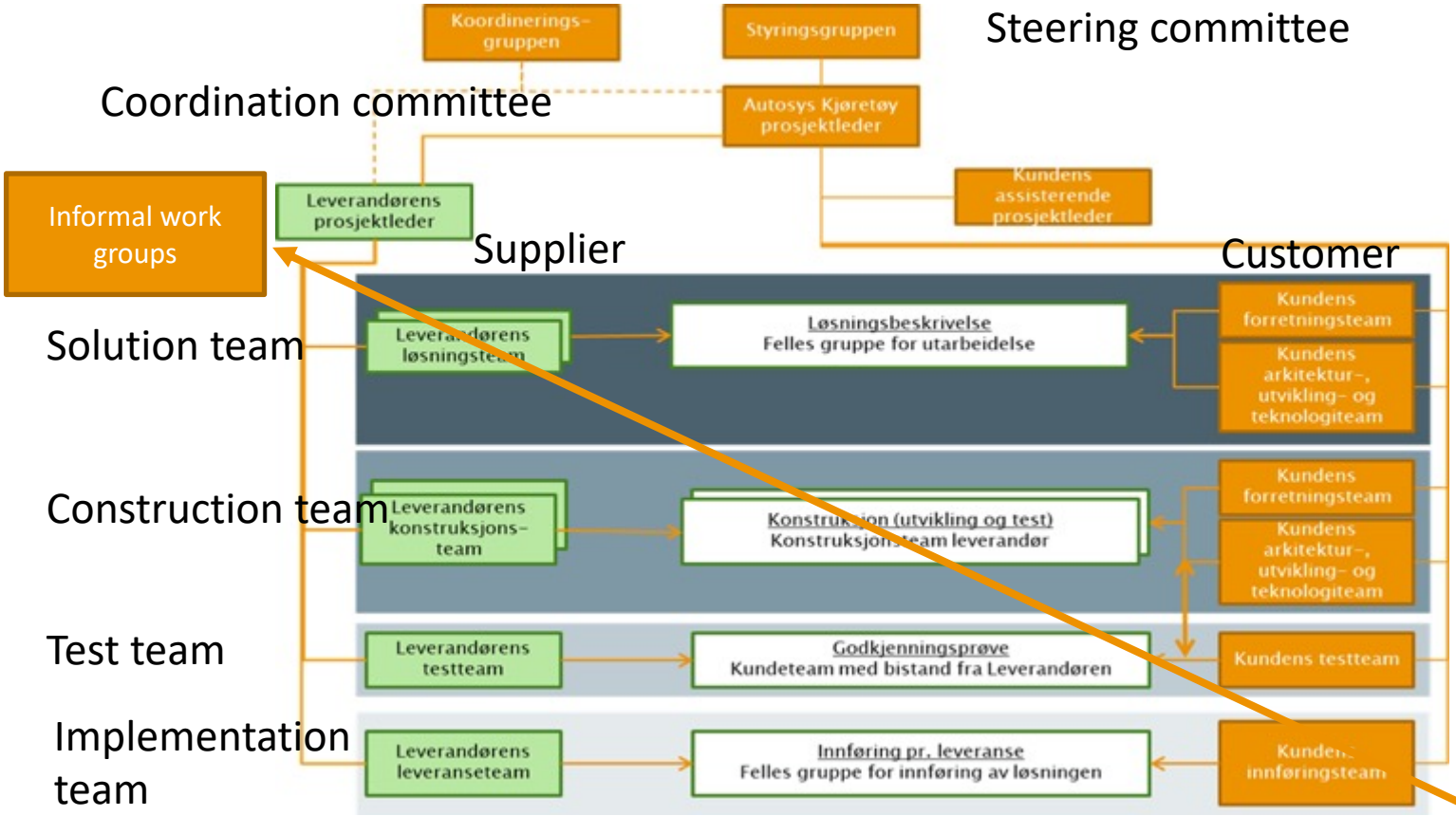
Management, line organization and operational implementation





Statens vegvesen

Process organization - dynamic organization



Leadership is to stimulate and accept the rights, ability and initiatives to organize the resources for optimal work logistics among project members according to core values.

How to find my own way?

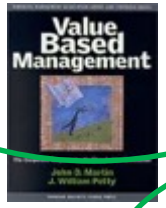
Statens vegvesen

The way to Leadership --- some philosophies

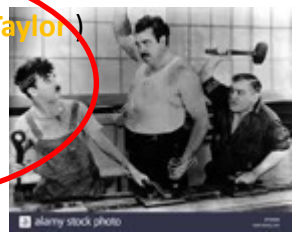
Hierarchical organization
- authoritarian managers



VBM



Scientific management (Taylor)
Mass production
Industrialization



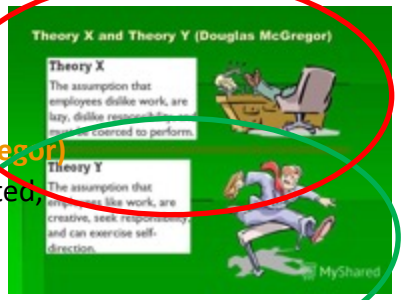
Supportive management



Bureaucratic management (Weber)
Impersonal positions earned
Rule mgt



Theory X , Y, Z (McGregor)
The Lazy, The Motivated,
The Life loyal



George Kenning theory (Schander)
- Management is a direction
- Neither consensus nor direction
- Maximize use of people (others)





MBO / Result
(Peter Drucker)

MBWA (Tom Peters)



TOMM - Effective management
one minute goal -
praising - reprimands

"Leadership means to encourage people with a little push or pull to live up to their fullest potential"



Flexible philosophy - productivity - interdisciplinary - performance-oriented

«Competitiveness»

Statens vegvesen

Statens vegvesen



The brand

Culture



Competence



Leadership versus Management

Statens vegvesen

Level of Managing

High









Low

High







Level of Leadership

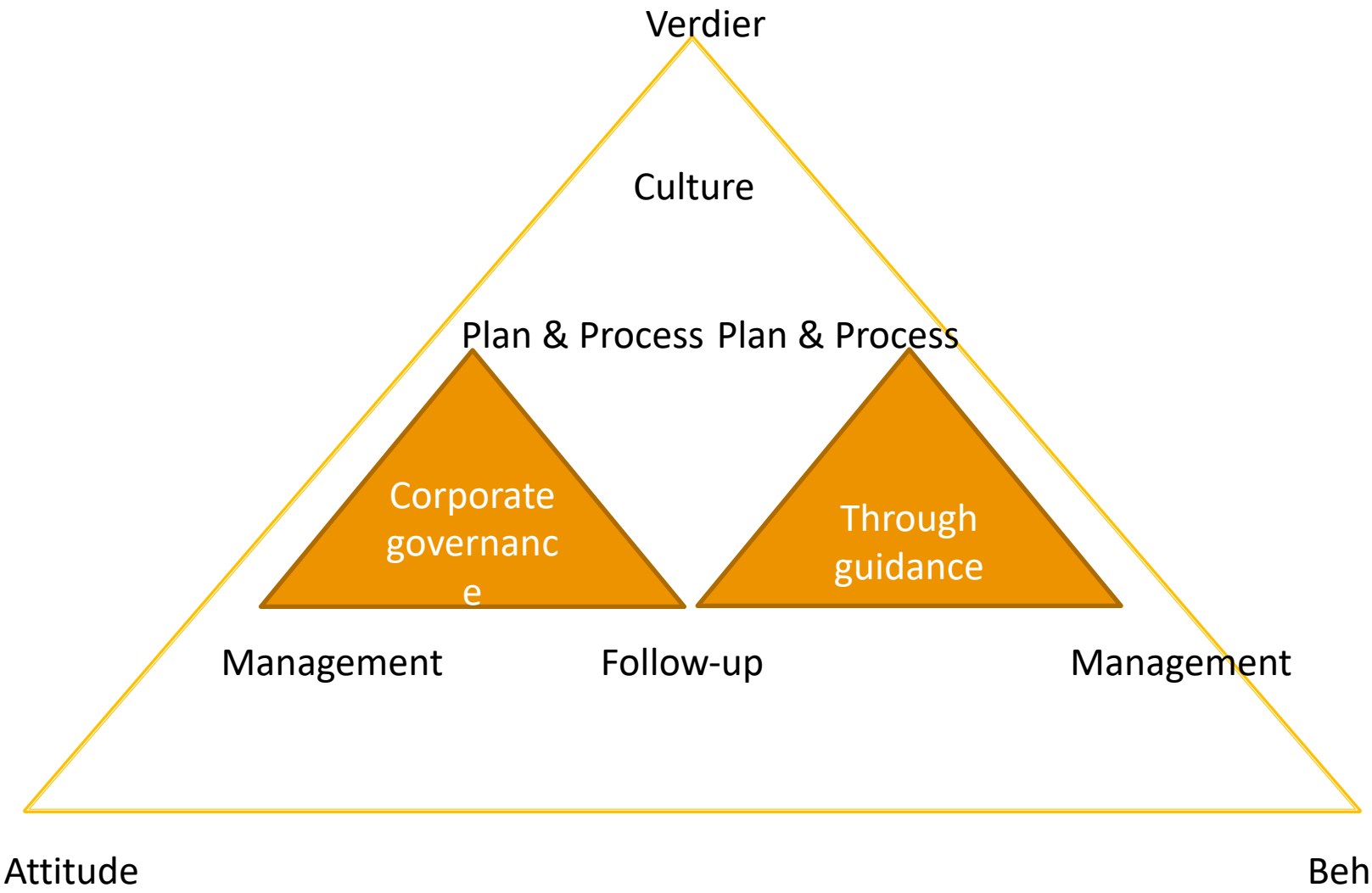
Low

What do you like? Wha



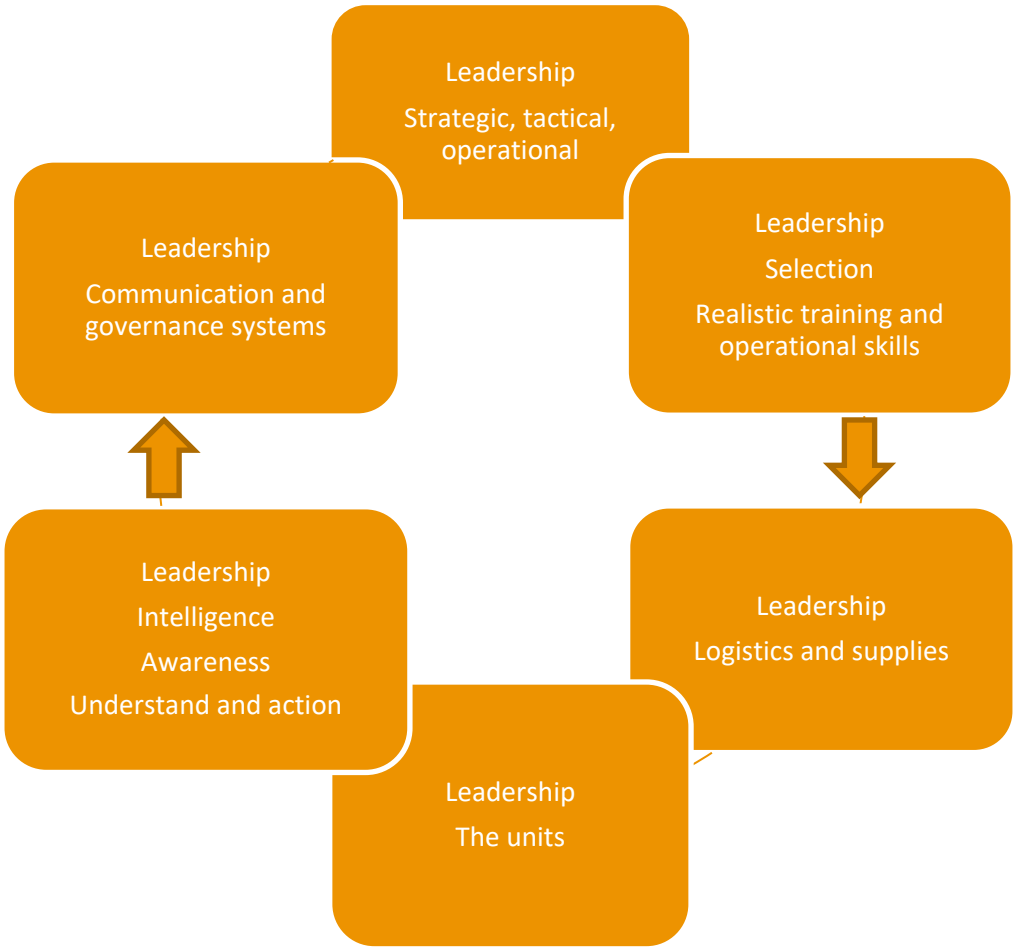
Statens vegvesen

Performance and goal achievement



Military leadership model is not very different from our project leadership challenges

Statens vegvesen



Leadership, training, situational awareness as a continuous process

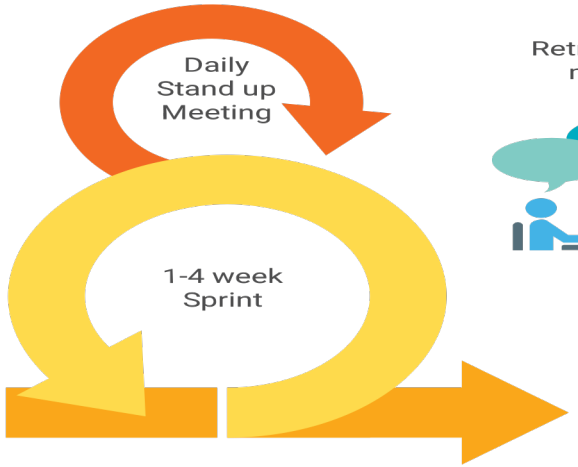
Flexible implementation model

Statens vegvesen

Prioritization, holistic approach

Product Backlog

Sprint Backlog



Retrospective meeting



Continuous learning

Result



Sprint demonstration

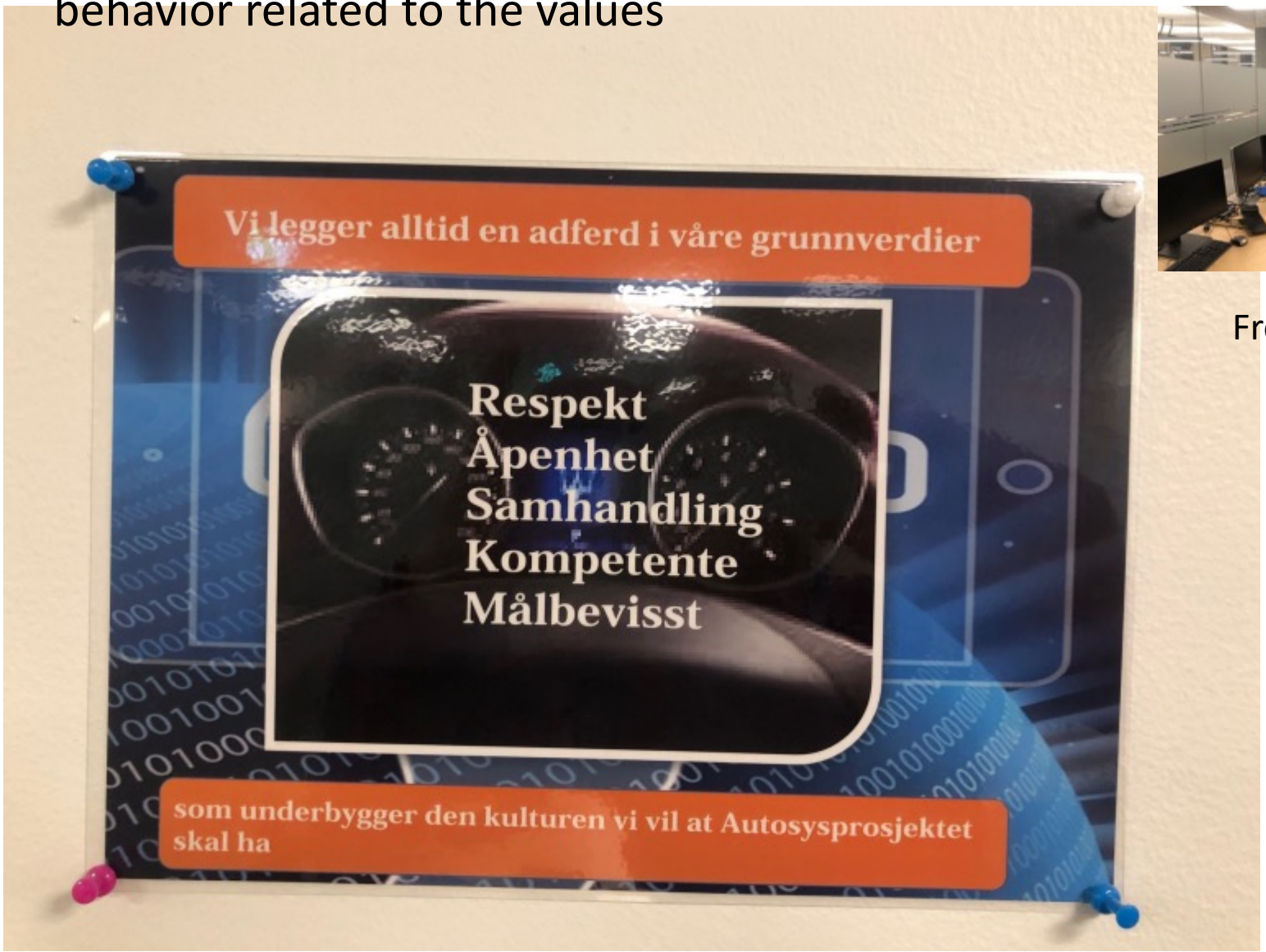


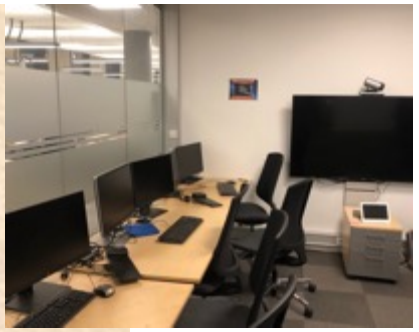
Real & uekte team



Flexible implementation model with anchored basic values for culture building is a good combination that provides a basis for effective collaboration

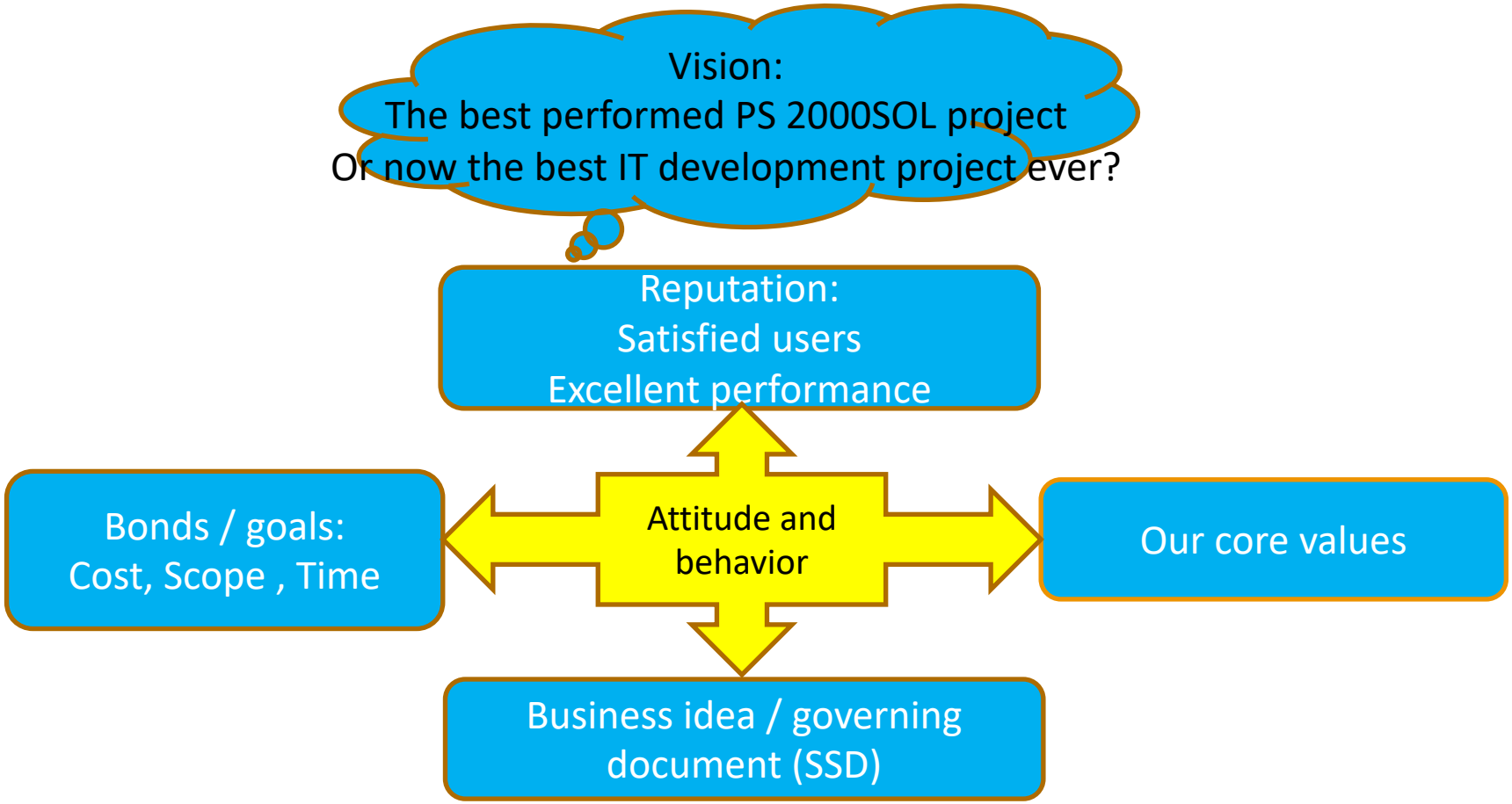
Value-based leadership and culture are alive.
The values hang in each room and remind us of our desired behavior related to the values





From Test-lab

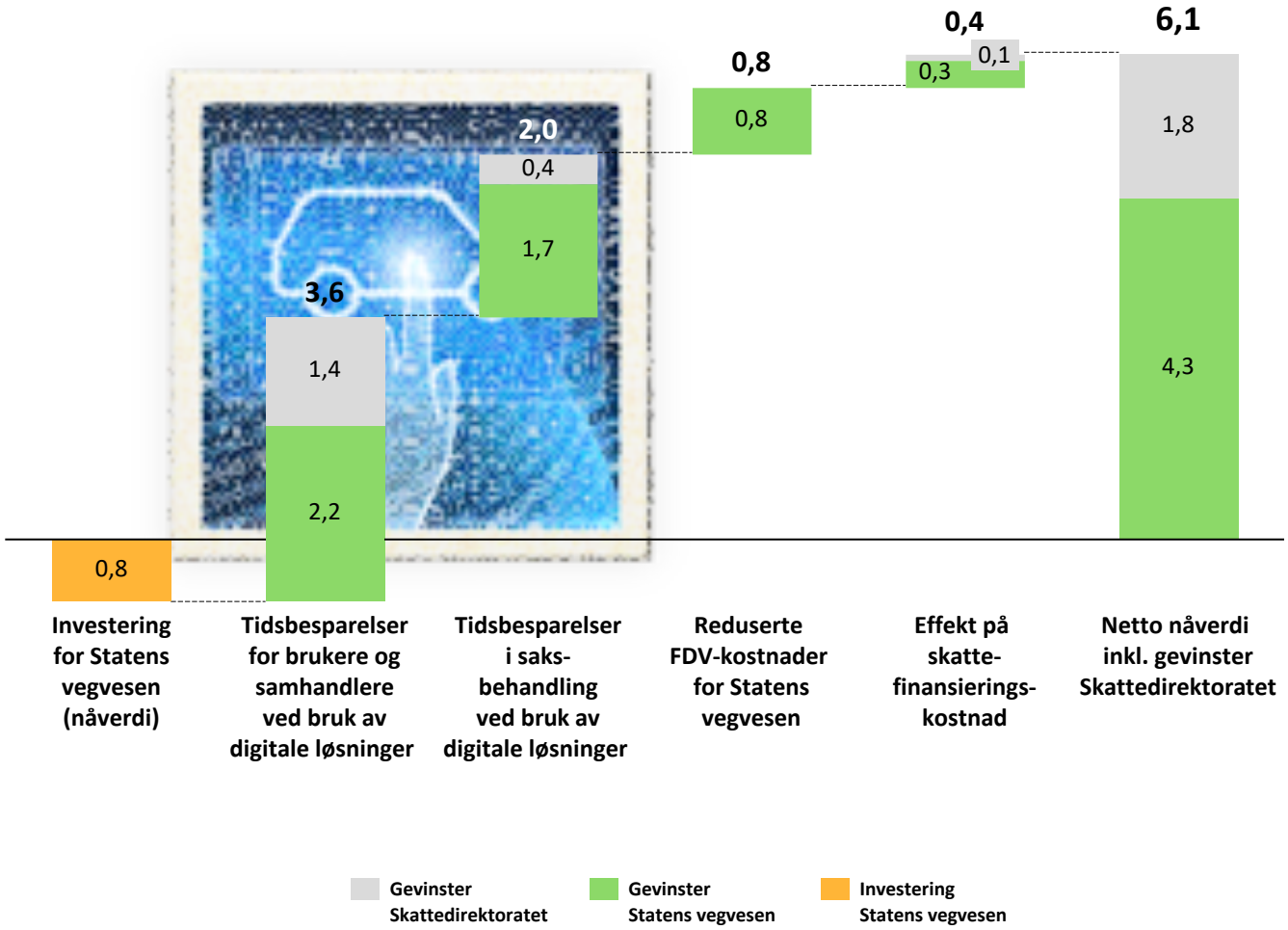
A complete business or mission map
The Autosys map involves all project members



Leadership must include all parts of the company / organization and stakeholders as the projects strategic relationships and targets

Estimated potential for socio-economic profitability - something to be proud of

Present values in billions of kroner, price level 2019 kroner



EJ

Autosys vehicles

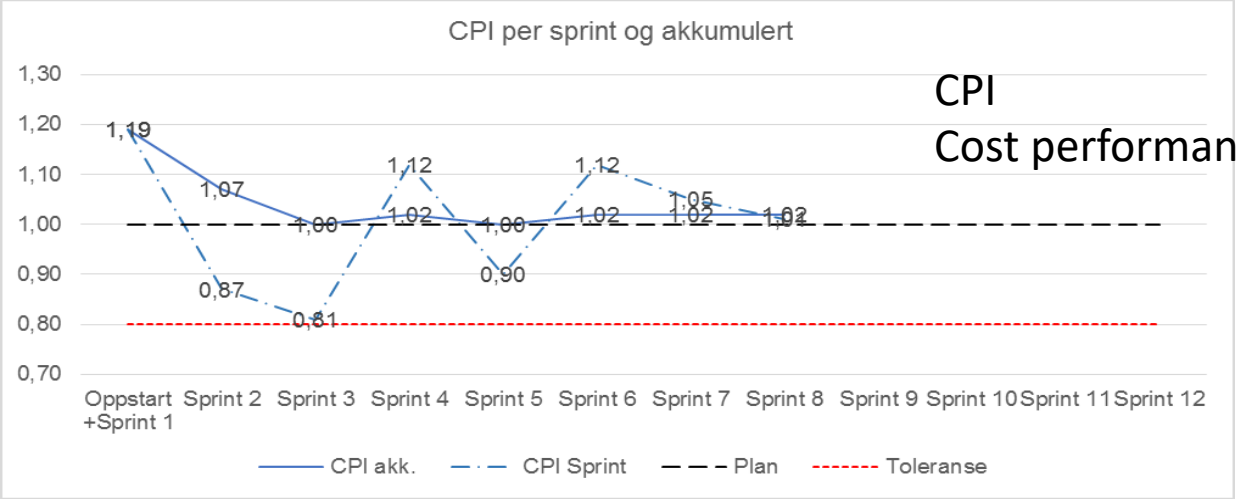
Finance, management and follow-up



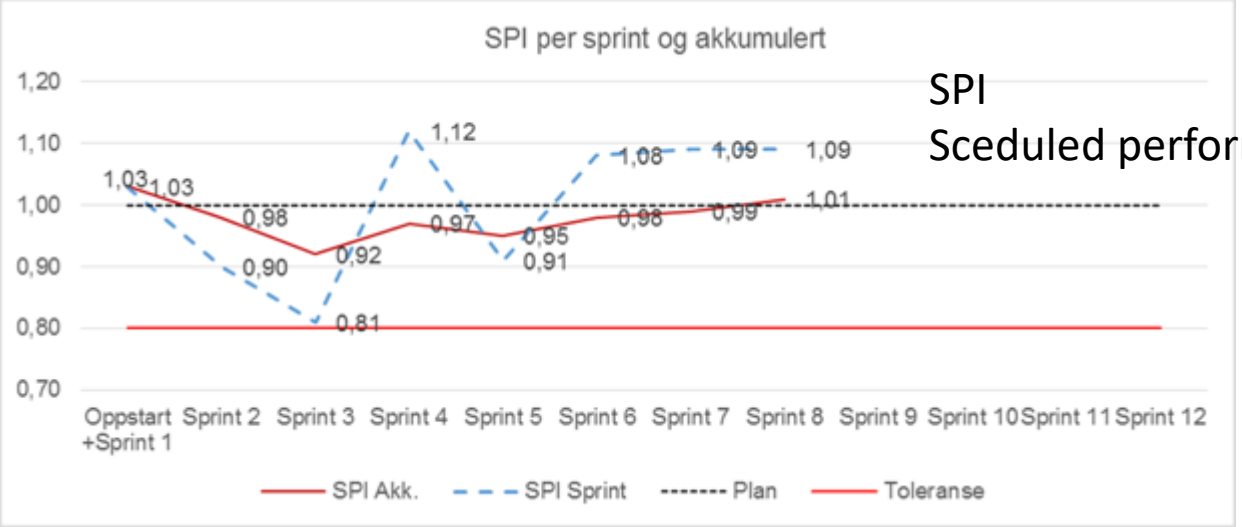
Statens vegvesen

Autosys vehicles

Key KPIs related to productivity and diet



CPI
Cost performance index

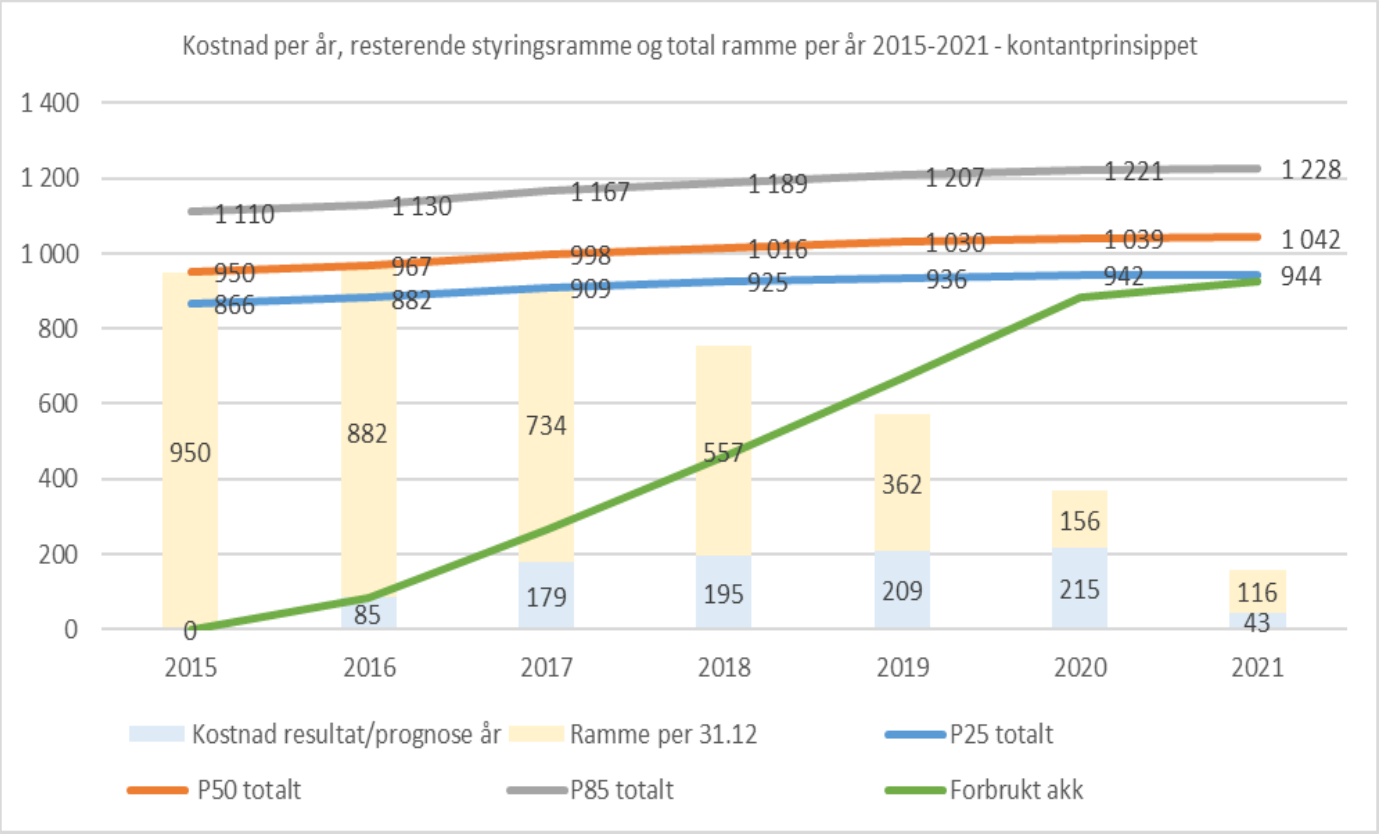


SPI
Sceduled performance index

EJ

Autosys vehicles

Burn down to EOP



Statens vegvesen

Socio-economic benefit as a basis for profit taking

Social goals

Safe, user-friendly and efficient management and exercise of authority in the vehicle area

Impact target

E1 Increased availability
E2 Increased flexibility
E3 Increased quality and equal treatment
E4 Increased efficiency
E5 Increased service
E6 Increased safety and robustness

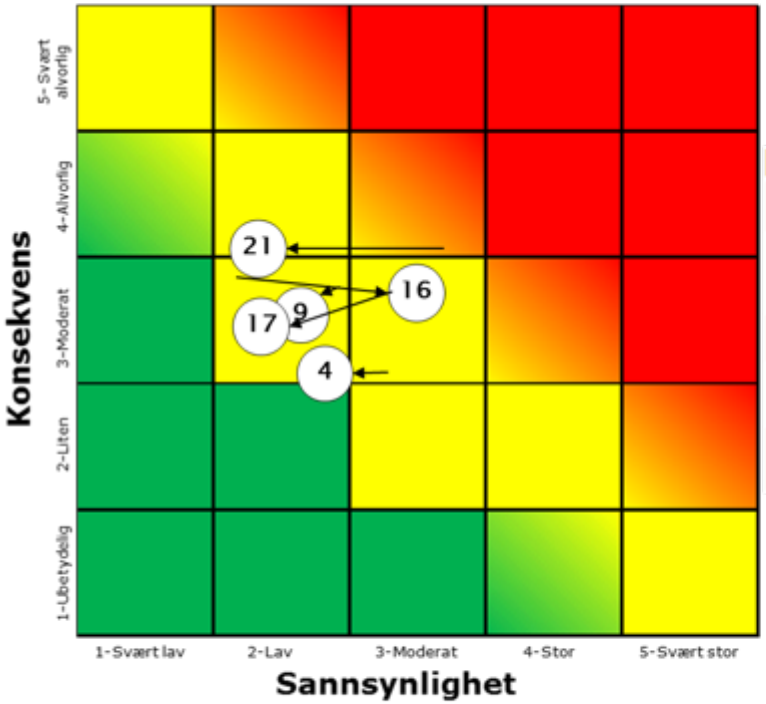
Extraction of utility value

- By the Norwegian Public Roads Administration itself through less **use of resources for case processing**
- By the public through **fewer attendances** at traffic stations using self-service
- By the Norwegian Public Roads Administration's dealers and partners through **more efficient collection of tolls**
- More **flexible ICT solution** for future development
- Greater degree of **equal treatment**
- More **robust database**

Net priced socio-economic effects total approx.
1,600 MNOK (= present value of the measure) calculated in 2015
Non-priced benefits are strongly and unequivocally positive

Statens vegvesen

Active risk follow-up challenges the project on an ongoing basis



#	Beskrivelse
4	Prosjektet har **grensesnitt mot SKD, Politiet, Toll og TFF** – nye behov som angår dette grensesnittet kan føre til omfangsøkning og dermed økt kostnad
9	Stor mengde **data skal migreres fra Autosys motorvogn til Autosys Kjøretøy**, disse dataene er av dårlig kvalitet, så dersom ikke mangler blir identifisert tidlig nok og hensyntatt i løsningsdesign kan dette føre til uforutsette problemer i konstruksjon og dermed medføre omfangsøkning og økt kostnad
16	**Større avvik fra baseline ved re-estimering av produktkø** med leverandør kan medføre diskusjoner eller endringer i prioritering av omfang, noe som kan føre til økt kostnad
17	**Uklarhet om personvern og GDPR** kan medføre økt funksjonelt omfang eller dårlige kvalitet og forsinkelser/kostnader i prosjektgjennomføringen da nye krav kan komme inn sent
21	**Hvis ikke eksterne konsumenter av AMV flytter seg over på AKF-tjenester** etter hvert som prosjektet leverer, vil prosjektet ikke kunne skru av AMV til planlagt tid, som vil kunne føre til økt kostnad og tidslinje for prosjektet

Ongoing risk assessment at project level and delivery level. Management review weekly (responsibilities, measures, results)

Statens vegvesen

Autosys vehicles are socio-economically profitable

Present values in billions of kroner, price level 2019 kroner

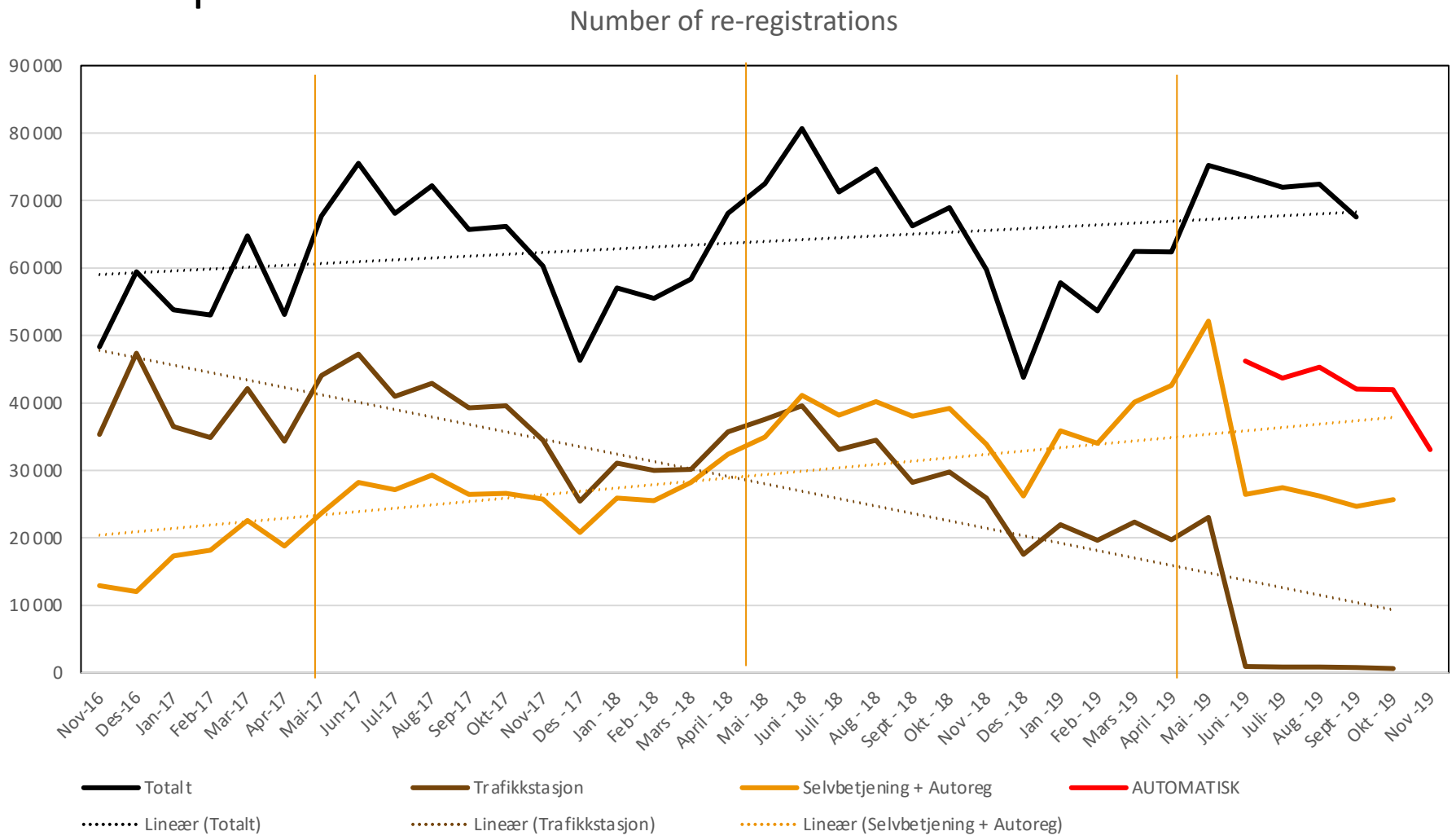
Socio-economic profitability potential, net present value, for Autosys vehicles is a total of> NOK 6.3 billion (2021).

In SSD, the development will stimulate the development of digital collaboration between agencies.

The calculation method is according to FIN R-109/14, Perspektivmeldingen 2017 and DFØ's guide in socio-economic analyzes

Statens vegvesen

Value triggering through integrated digitization in practice



Statens vegvesen

Extraction of utility value
Socio-economic effects from L4.2

Area	Effects	Potential	Savings
N2 Self-service – Change of ownership / Sales report	Increased use of electronic solutions	62 million kr. annual	Time for customer
N3 Self-service – Re-registration	Increased use of electronic solutions	ISK 39 million annual	Time for customer
N5 Increased use of Autoreg	Reduced attendance at traffic stations	DKK 12 million annual	Time for customer
N12 Managing regulations and regulations	Increased system support in the treatment		Better quality
N13 Better equal treatment	Increased system support in the treatment		Better quality
N14 Reduce training time for new employees	Better self-explanatory solution and system	Increased quality and reduced quality deficiencies 10+ man-years?)	Time and knowledge with caseworkers
N22 Introduce varied and motivating work tasks	Increased use of Industry Solution and Self-Service Solution. Fewer simple cases at the traffic station		Better motivation and time with caseworkers
Nxx Increased security in the system	Less risk of error or misuse of the solution		Safer

Great potential for socio-economic gains

EJ

Statens vegvesen

Construction Overall - Delivery 4.2



Progress | Quality | Interaction | Costs

Summary status:

- Quality set yellow w / green border due to the number of outstanding deviations
- Sprint 4.2.9
  - 9 of 12 scheduled user stories delivered
  - 1 blue delivered
- Sprint 4.2.10
  - Planning to complete construction on 11 sprinters
- **Test**
  - Scheduled 4.2.10
    - Ongoing system test functional as normal
    - New iteration safety test and performance test
    - Planning of AST and operational test

Deviation

- Not delivered: AUTKJOR-3207, AUTKJOR-3470, AUTKJOR-3474
- Performance test baseline driving in STM1 is under construction, but delayed due to various environmental challenges. Consequence is delay in ordering STM3 for performance test 4.2

Challenges

- Backlog discrepancy. The supplier maintains a focus on handling deviations with dedicated deviation days .

Risk

- Delayed start of performance testing at delivery level in "productive" test environment (STM3). Scheduled start-up is 01.11.

Current topics

- No

Statens vegvesen





Statens vegvesen

In summary

- **Very good socio-economic profitability**
- **Good project management lands a large ICT project well below the control framework (P50) with high quality and within the time frame.**
- **Significant increase in digital users**
- **Satisfied users internally and externally**
- **Potential for further digitization of services**
- **Good collaboration between agencies and organizations**
- **Autosys vehicles as a reference case for efficient system development in public and private enterprises**

Statens vegvesen

Afterword

Leadership is personal… ……….

F ind your own way by .. by

Listening, Learning, Leading… ..

and Repeating

Leaders are present - always

Statens vegvesen

Leading and managing professional organizations

Listen, Learn, Lead

Accenture
Erik Johannessen 17.01.2018

Tips

Statens vegvesen

Autosys vehicles

- Be present properly
- L, L, L
- Respect for each other
- Transparency
- Listen, pull together, reconcile and conclude
- After one or two rounds, what you intend to say adds something new
- Distinguish between debates and "hearings"
- Do not discuss what individuals or groups should investigate, send back
- Being seen and heard is important for everyone
- There is no room for prima donnas.
- Mmbwa (management by walking around)
- Establish images of complex challenges