APPENDIX C

BACK OFFICE
(“FELLESSYSTEMER”)

Contents

1 Back Office overview 2

2 Services and customers 3

2.1 ERP (HR, Economy/financial, resource planning) 4

2.2 Service platform (common integration platform under development) 5

2.3 General cooperation tools (Office 365, Workplace) 8

2.4 Client Management 8

2.5 Procurement, project management and contract management 11

2.6 Other areas supported 12

3 Strategy 17

4 Projects 18

5 Service Levels 20

6 Spending and budget 21

7 Employees 21

8 Necessary hardware, software and facilities 23

8.1 Systems 23

8.2 External services 23

9 Glossary 24

10 Attachments 24

1 BACK OFFICE OVERVIEW

The Back Office section provides support services to NRK's approximately 4000 internal users in service areas such as client setup, user administration, IT-security, resource planning and contract management. The section has 17 employees, and is responsible for production planning and technical management of systems within ERP/HR and finance, document management and more, as well as having the architectural and integrational responsibility for the domain. The area has been going through changes in the last years, due to extensive procurement projects, and is likely to be subject to further change in the future. The section participates in large IT procurements with requirements specification and SLAs and project management in small procurement projects. There is a clear expectation from NRK's users that tools provided by Back Office are user-friendly and modern.

Back Office's sub-domains:

The client group handles the setup of clients/PCs/Macs in NRK for both administrative users and production personnel. It has the responsibility for software distribution and the overall software and device management, including mobile device management (MDM). Clients used in production require custom deployment methods and quick response to new versions of Adobe and other production software. This includes special configuration of these products, as well as testing of hardware and software in a production environment.

The operational IT security group is responsible for monitoring clients and antivirus, responding to security incidents and is supported by NRK's external supplier of antivirus software.

Different **administrative systems/ERP-systems** are managed and supported by this group.

The Back office section is responsible for the **system integrations.** This is currently organized as a project with six external developers and one internal employee.

The Oracle Database Management group is responsible for operation, monitoring and error management, in close cooperation with application managers in NRK.

The Back Office section is also responsible for **user administration** and **access management** based on AD and AD-groups. An ongoing pre-project assesses the need for Identity and Access Management (IAM) in NRK. The goal is to acquire a system/service during 2018.

Back Office also has the responsibility for all **print services** in NRK. This involves on-site handling of printers supplied by an external supplier (Canon). Printers can be critical to production (e.g. printing scripts for live broadcasts), thus knowledge of NRK's organization and building facilities are important to provide good service, as well as prompt response to downtime/errors.

The Back Office section is responsible for delivering infrastructure services like PKI, Network Policy Server (NPS) and DirectAccess, and developing new services, such as Always On VPN.

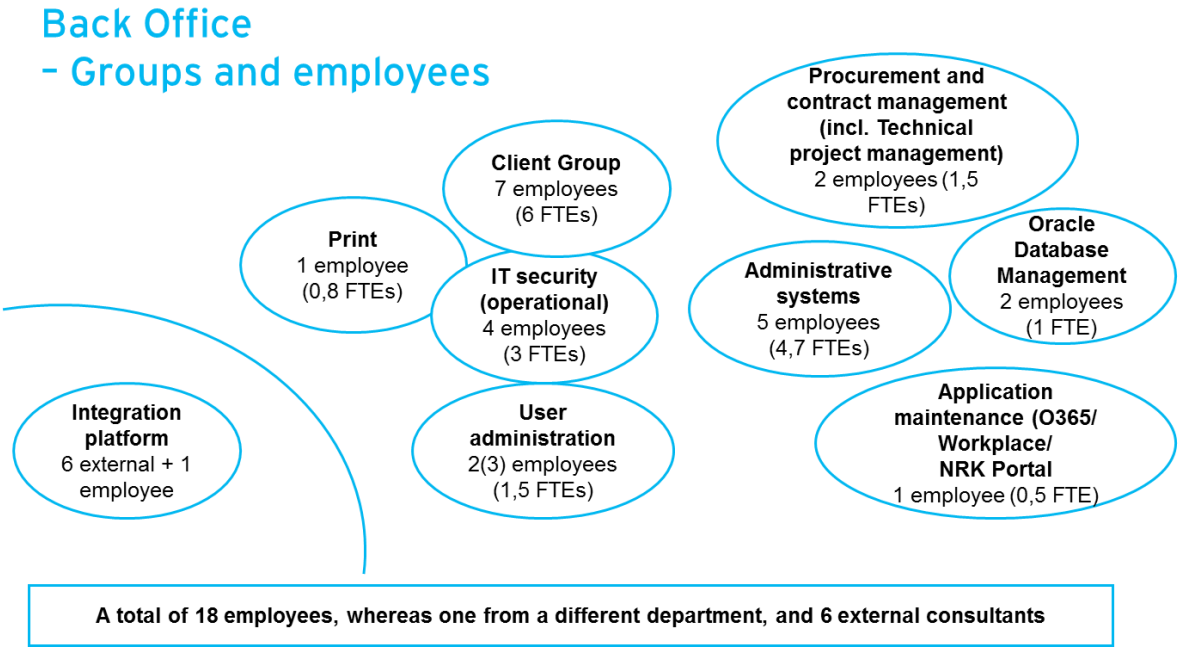

Figure 1 – Back Office – Groups and employees

2 SERVICES AND CUSTOMERS

The core business of the Back Office section is divided into the six main categories, as described in Table 1. A glossary is found in chapter 9, where NRK-specific systems and concepts are explained.

Main category	Description
ERP (HR, Economy/financial, resource planning)	Various systems, e.g. HRM, production planning, time tracking and calculation of variable salary, document archive, etc.
Service platform (common integration platform under development)	Platform for information exchange between Administrative Systems in NRK
General cooperation tools (Office 365, Workplace)	Technical management of Office 365 and Workplace-solutions
Client Management	Setup, management and development of clients (Mac, PC, mobile). Also responsible for client security
Procurement, project management and contract management	Requirements specifications, SLAs and project management in connection with software procurements
Other areas supported	Oracle database management, user administration, print, license management, etc.

Table 1 – Main service categories

The services within each main category are described in the following subchapters.

2.1 ERP (HR, Economy/financial, resource planning)

2.1.1 Mediapulse

External solution for production planning of employees and hardware/equipment. Supplied by Xytech, runs on on-site hardware. Back office is responsible for operation, configuration, maintenance, training, support of the application, as well as cooperation with the vendor.

2.1.2 X9/X98

Proprietary system running on Oracle DB. X9/X98 is a tool for planning shifts (in Norwegian: "turnus"), time tracking and calculation of variable salary based on rules in AML (in Norwegian: “Arbeidsmiljøloven”) and Local Agreement for working hours, overtime and non-regular working-hours. Planned process of replacing X98 with X9 in 2018. Back office is responsible for operation, maintenance, development, training, documentation and 2nd line support of the application.

2.1.3 Tasks related to other administrative systems

Service	Description
Implementation, operation, maintenance, development, upgrades and adaptations of Administrative Systems	Maconomy, Current, Contempus, transfer to UBW HR, CARK, Kantina, BergHansen, Ejournal (SuperOffice) Including overall view of how the systems interact and how the needs and processes are implemented in the systems
1st-3rd line support	1st line support: locked accounts etc. requests from data support and Service Manager (ITSM tool) 2nd/3rd line support: Troubleshooting and problem solving. (requires specific NRK-knowledge)
Incidents and Problems (ITIL)	E.g. Maconomy, Current, Contempus, Data to UBW HR, CARK, Kantina
User-training (new and existing systems)	E.g. Maconomy, Current, Contempus
Participation in procurement and projects	E.g. as an architect, technical specialist, project manager
Support - Registration of transactions	Import of transaction files, postings, reversal of duplicates, etc.
Control / Monitoring of administrative systems	• Control of EBI, Carrydox • Control 12 background-jobs in Formula (start/restart when necessary) • Control server-list in Contempus • Control transfers to UBW
Confluence	Documentation (for all administrative systems)

	• After upgrades and new versions, incidents and events • Best practice
Task management in Jira	Tasks that do not come from HP Service Manager
Maintenance of NRK-developed pages in Maconomy web portal ("Et enklere NRK")	Maintenance of custom webpages, links, screenshots and custom reports.
Data capture for internal invoicing, and working hours for variable pay	Maintenance of Maconomy, operation and support for registration of equipment and working hours in multiple systems.
Basic Data Setup	Maintenance of basic data setups, e.g. weekly calendars, accounting periods, accounting dimensions, hierarchies.
Integrations	Design, development and operation of integrations. Integrations exist for both master data and transactions, and with a lot of built-in business logic
Consistency-check between systems	Many systems, different data models and integrations create the need for regular tuning and consistency-checks between the systems.
From procure to payment - Purchase of items other than movies /series/rights	Maintenance, operation and support. This process is implemented across multiple systems and frequent/complex integrations.
Updating the Service Catalogue	Make sure that the content for Administrative Systems is correct

Table 2 - Tasks related to other administrative systems

2.2 Service platform (common integration platform under development)

2.2.1 Service platform

Purpose:
The Service platform is a solution that will take care of the need for information exchange between Administrative Systems in NRK. The solution will lower the complexity, thus lowering the costs, associated with changes and replacements of integrated systems.

Drivers:
Today's Administrative Systems are closely integrated. Data exchange has been realized in such a way that the systems are highly dependent on each other to function.

The systems' responsibilities are often unclear and partly overlapping. The use of different technologies and practices over time has resulted in a large inherent complexity that makes it costly and time-consuming to make replacements and changes.

The Service platform should be a robust, standardized and flexible solution capable of managing integration in the administrative portfolio in a simpler and more cost effective way than today. Simpler integration is considered essential for NRK to succeed with the replacements that are intended in the long run in the administrative part of the business (including transition to SaaS solutions), thus contributing to a successful conversion.

Operational:

The Service platform is labelled as a support system (criticality 3), and offers support during working hours (8-16). There are no formal SLAs, and it is organized as a scrum team that utilizes agile methods.

Service	Description
AO, AM and AD	
Participation in projects/development	• New financial system • Safety and emergency preparations • Access control
Internal supplier of the integration platform	Control of data exchange between Administrative Systems that are subscribers and users of services.
Requirements specification and orders for projects	• Contributes with SSA Appendix 3 (Customer Technical Platform) in procurements • Assists projects in formulating orders (user-stories, non-functional requirements, assessments, acceptance criteria, "definitions of done")
Implementation	Analysis, system architecture and design work of integrations (new ones, improvements and extensions).
Monitoring	Logs, alarms, etc.
Documentation	Maintain overview of all integrations (documentation on Confluence)
Transparent development process	Keeping stakeholders continuously informed about progress and important events. Demo of new functionality every other week. Daily morning meetings. Weekly priority meetings.

Table 3 - Service platform

The figures below show the AS-IS (Figure 1) and TO-BE (Figure 2) integration architecture:

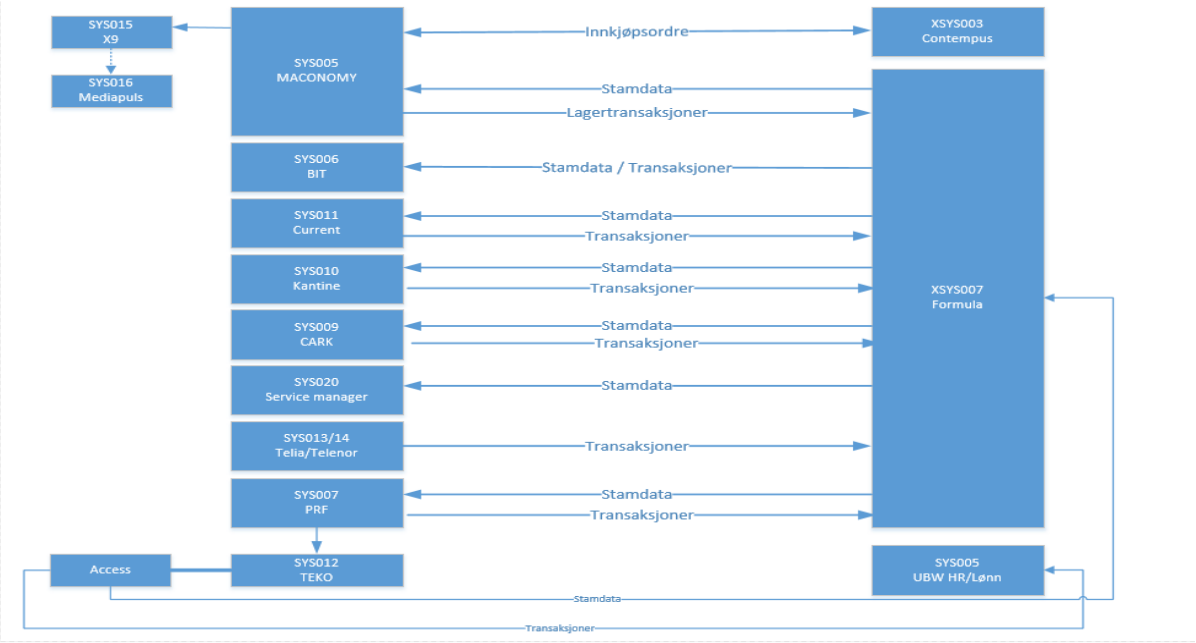

Figure 1 - AS-IS Integration Architecture

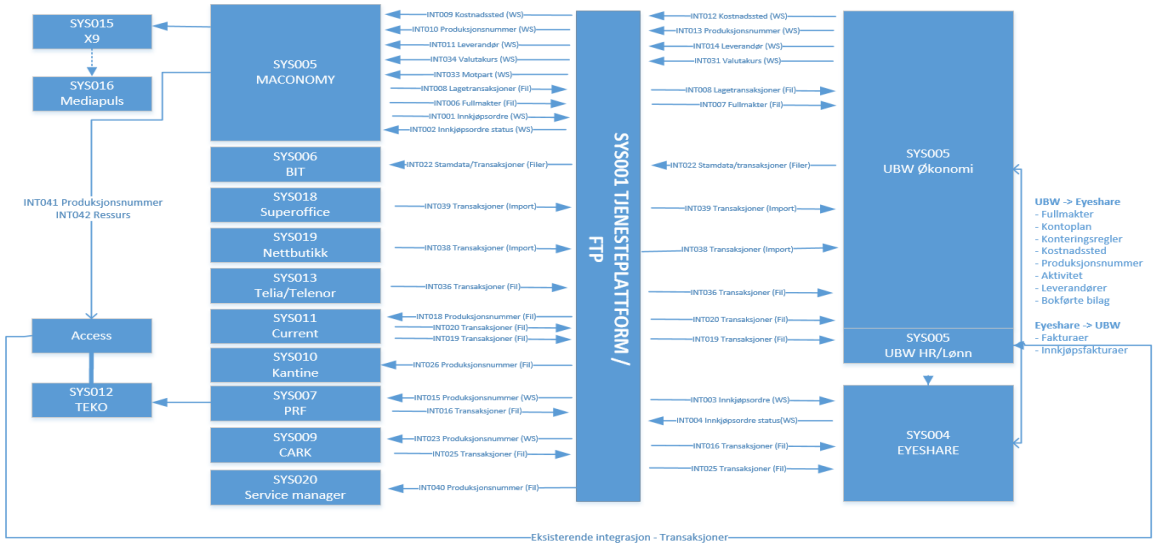

Figure 2 - TO-BE Integration Architecture

2.2.2 Solution architect and domain architect (ERP and Administrative Systems)

Service	Description
Solution design	Knowledge of the needs and processes covered by these systems, and responsible for implementation. Sparring partner when designing work processes.
Information architecture	Structure of concepts, hierarchies and information elements used in the administrative domain, as well as the connection with concepts and information elements in other system domains in NRK.
Integration architecture	At the conceptual level. Specification and ordering of integrations from the Service Platform, etc.
Procurement and implementation	Participation as an architect in procurement and implementation projects

Table 4 - Solution architect and domain architect

2.3 General cooperation tools (Office 365, Workplace)

2.3.1 Application maintenance

Technical management of various systems, e.g. Office 365, Workplace and NRK Portalen.

Service	Description
Workplace, Office 365, NRK portalen	1st -3rd line support and problem solving, responsible for the technical architecture
Migration from internal systems	**From**: Internal file server ("Felles") and "Torget" **To**: Sharepoint
Phasing out internal systems	Internal Information Web, internal storage for users
Administrating access	Access for administrators and IT admins

Table 5 - Application maintenance

2.4 Client Management

2.4.1 Clients IT-security

Service	Description
Operation of antivirus software on the clients (Symantec)	• Packaging, deployment / installation and upgrading of antivirus software (Windows and Mac clients) • Create policy and rules / configuration, scan, etc. • Monitoring, error handling and error correction • White Listing (NRK-developed applications) • Block malicious websites via client firewall • Performance adjustments linked to NRK's production systems, testing
Operation	• Email Encryption (PGP – Symantec Encryption Desktop) • Internal certificate solution (PKI)

	○ Using Active Directory Certificate Services with a two-layer structure (offline root CA and a subordinate issuing CA), as well as an NDES / SCEP server intended for Macs / mobile devices ○ Enrollment of certificates to Windows Clients, macOS, mobile devices, web servers and code signing. ○ The PKI solution is critical for infrastructure services like DirectAccess, WLAN and VPN. ○ Cooperation with the distribution and publication department, which delivers web servers where the Certificate Revocation List (CRL) is published externally. ○ Monitored by SCOM with a community management pack and NRK developed management pack to give the health for the PKI service, expiring certificates and checks for updated and externally distributed CRL files. • Network Policy Server (NPS): ○ WLAN depends on the NPS service • Hard disk encryption (Bitlocker/Windows and FileVault/Mac) + error handling
On duty guard (supervising)	Monday to Friday, 8-16. Handling events (phishing, ransomware, infected machines). Checking antivirus server health, monitoring clients.
Create reports	Daily and monthly reports. Content: findings from antivirus software, user-reported risks, etc.
Contributes to DiSi (Digital Security)	Strategic team across NRK, led by Kai Johansen. Meetings every Thursday + projects
Vendor management	• Creating and managing VPN user accounts for external vendors, giving them access to selected machines at NRK • Contact with TSOC (Telenor Security Operation Center) • Collaboration with NSM
External SSL Certificates	Responsible for the external SSL certificates from Buypass / GlobalSign for NRK's web services, such as www.nrk.no, tv.nrk.no.
Manage patching of Windows servers and clients	• Approve, test, follow up and facilitate Windows-clients (WSUS) and Windows-servers (SCCM) • Pilot-testing on client and server • Approve after test and follow up clients and servers who did not install patches
Coordination with NRK's needs	Make sure security measures harmonize with NRK's special needs (production, publishing)
Monitoring	Using AccelOps

Table 6 - Clients IT-security

2.4.2 Client platform

OS for Mac and Windows, customized clients and production-tools such as Adobe. Lifecycle management and inventory for clients and software in addition to MDM.

Service	Description
Client management tools	• PC, Mac, iOS, Android • LANrev and FileWave • Administration based on dynamic rule sets • Tools for inventory and distribution of software • Software packaging (currently over 800 packages) • Creating custom file sets (granular control of any file) / scripted installations / MSI, EXE, PKG, IPA, APK • Including numerous LOB applications • Lifecycle management for both hardware and software • Scripting (automation and configuration) • Customization for each NRK location nation-wide

Operation, maintenance and development	• NetOp (remote control)
	  ○ Many servers for production- and broadcast-systems are depending on a logged-on service account to run the server applications. Since RDP is not suitable for remote administration for these servers, NetOp is used instead for remote administration.
	  ○ This is an important system for administrators to operate and administrate their production- and broadcast-systems.
	  ○ The NetOp server side infrastructure has NetOp-servers placed in the internal network (both at Marienlyst and the disaster site) and in the DMZ for supporting external administration. A new cloud solution (portal.netop.com) is also being tested.
	  ○ Packaging, testing and deploying new versions
	  ○ Creating rule sets (defining who can access which machines)
	• LAPS (Local Administrator Password Solution) for creating and managing admin passwords for Windows
	• Direct Access (to be replaced by Always On VPN)
	• Maintain Office 365 software and OneDrive. Security and other updates
	• Production computers (Filewave for Mac and PC)
	  ○ creating file sets for the distribution of time-critical production software such as Adobe
	• Client and software management using LANrev, FileWave, DeployStudio, MDT and DEP / Microsoft Autopilot
	• Mobile Device Management (MDM)
	• Development and maintaining efficiency of OS-deployment
	• Operating Systems design, configuration and endpoint security
	• Windows reference imaging using MDT/WDS and Hyper-V
	• Maintain drivers and firmware (BIOS/UEFI) on all clients in NRK

2nd/3rd line support	Expert level problem solving - incl. administrative computers, production systems, OS, tablets and mobile devices
Testing, troubleshooting and facilitating	• Software – before distribution to customers • New hardware • New functions / features in the OS
Patching	Windows, OS, third parties (e.g. Chrome, Java, Flash etc.) Create, test and deploy packages. Make sure that critical 0-day vulnerabilities are patched as soon as possible on all affected client computers. Remove outdated software versions that present a possible security liability.

Create policies for users and hardware	AD (Group Policy) / Azure Active Directory / MDM configuration profiles Configuring settings such as auto vs. manual patching, baseline security policies, etc.
Custody of licenses and agreements	
Vendor management	Primary contact with Microsoft, Apple, Adobe, Crayon, etc. Technical contact for mobile technology with suppliers (e.g. Apple, Telia, Samsung)
Requirements specification	Requirements specification for computers (framework agreements)
Procurement	• PCs (framework agreements - Atea, Dell, Komplett, Intello) • Macs (Agreement with Apple – bought at Eplehuset)

Table 7 - Client platform

2.5 Procurement, project management and contract management

2.5.1 Procurement and Contract Management

Service	Description
Contract management	End-to-end supervision and follow-up of contracts
Participate in procurements (of systems, framework agreements, equipment, services)	System architecture (portfolio), coordination with Procurement-department, assist in writing IT-technical part of procurements and IT requirements (requirements specification)
Financial supervision	Financial follow-up and attestation of invoices
SLAs	Defining and following up SLAs for SaaS-solutions (HR/Payroll, finance, expenses)
Project management	Project management in procurements and small implementations

Table 8 - Procurement and contract management

2.5.2 IT implementation

Service	Description
Requirement specification	Providing support on technical requirements in procurements
Technical project management and support	Assist and coordinate technical implementation
Coordinating technical experts, client, SSO, integrations, etc.	Coordinator between IT-staff and non-IT-staff, implementing SSO or technical solutions for SaaS/ PaaS
Staffing and coordinating IT-support in projects	Onboarding experts, system administrators and external vendors in projects
Coordinating support for tools, such as Office365 and Workplace	Mainly support to projects. Coordinator between IT-staff and non-IT-staff, contact vendor if necessary
Quality assurance	Of design documents
Launching systems	

Supplier monitoring and contract management	
Test	Framework and policy

Table 9 - IT implementation

2.6 Other areas supported

2.6.1 Oracle Database Management

Service	Description
Server and database operations	• From operating system (OS) and up • Upgrades, tuning and improvements • Monitors Security Update and assesses necessary actions • Several databases are critical for production and broadcast, hence they require close supervision and customized patching regime. • Moving data when discs are replaced
Patching of servers and OS	Coordinated with production and broadcasting
Application operation and monitoring	Oracle DB responsible – Bifrost (NRK's monitoring unit) supports, only on monitoring, outside regular office hours
Cooperation with Infrastructure-section	In case of hardware error: orders, server changes, etc.
Error and event management	Problem solving throughout processes involving oracle DB. HP Service Manager (ITSM tool) is used
Oracle license administration	**See Table 12 - Print** License management.
Maintenance of external operations contract for Oracle databases, (outside regular working hours)	• Current vendor is DbWatch • Follow-up on cases, checking access rights, updating documentation • Cooperation with DbWatch in development of monitoring-solutions for Oracle databases and applications
Contribute on ICT-framework agreement for databases (Oracle)	Every three or four years
Maintenance of Oracle database agreement in Oracle Cloud, CPQ-183312	Scheduled for termination in 2018.
Documentation in Confluence	Continuously updating documentation
Participation in projects	Procurements, changes, cooperation with the Service Platform ("Tjenesteplattformen")
Applications support	Support on applications that run on Oracle databases, including advanced support for system administrator, reporting errors to the supplier and 2nd line support for the Operations bridge (Bifrost).
Knowledge and monitoring of the flow of metadata	Handle inquiries regarding flow of metadata from the Master data systems to the TV/radio-players. Troubleshooting, e.g. check for issues in the Oracle databases. Defined as critical to broadcasting. Partial cooperation with Bifrost (outside regular office hours).

	Tasks such as: • Integration between music reporting and database for metadata, KEWA • Process of synchronizing Kewa, in cooperation with the developer in California • Maintain the QualityStage-application interface • PI-synchronization from the program player • Maintain updates of broadcasting schedule to the program player, EPGs, external press and internal web • Maintain PRF-databases (master for all broadcast planning in NRK) • PRF's integration to Abit (decommissioning system) • Granitt database and coordination with Oracle GoldenGate. Making redo- og archive-files available (cooperation with system owner)
Development of existing services	Simplifying routines, assessing alternative delivery models for Oracle DB operations, automation of patching, integrations, standby environments in case of crisis or critical errors Develop, set up and maintain automated tasks and standby test environments
PRF environment	Updating test-databases with production data. Maintain the production-like standby environment. Database at Tyholt (Trondheim) and in DS/X. Maintaining test databases, including test data, and making sure internal development departments have access to the correct PRF-data.
X9 / NRK School ("Skole") /ROAD	Proprietary systems: • X9's interface with Maconomy and time tracking. • NRK School's connection to MediaDb and access to media files (related to Guri and the editing-solutions). • ROAD – equipment register, which has its own form in the database
DMA (Digital Music Archive)	• Update test environment with production data • Maintain interface with client and web applications, storage solution. • Eportal – web portal for DMA. SqlNet connection to DMA database • Data base link to PI • Archivist – application for archivists • MAM system operation for alle media files • Maintaining the solution for storage of media files • Maintaining the server for web services
Historical databases	Finance and HR. Required by law, but also to enable historical lookups
Frequently updating test and standby environments with production-data	Vizrt, Metadata-test enviroment, X9(98)

Table 10 - Oracle database management

2.6.2 User administration (UA)

Service	Description
2nd/3rd line support	1st line support is carried out by the Service desk, but User administration is often directly contacted, because HP Service Manager is time consuming for end users.
Responsibility for user automation	• Solve UA-issues that come via HP Service Manager • Contact with Service Platform • Contact with managers in relation to employees' appointment/end date
Setup of AD Rights	• Creation and operation • Service accounts and common users • Distribution lists / distribution groups • Shared folders • Meeting rooms in office365 • tmp users • Function Groups • Rights Groups (for Access to Public Areas / Restricted Area / Servers / Systems/AD) • Server access for tmp accounts • Operation and maintenance of personal users (nxxxxx) in AD and exchange • Access control / change / mail addresses / phone number • AD / Office365 / exchange / hybrid / power shell
Monitoring	User-account-automation
Creation and change of rights	E.g. AD-groups or distribution groups
Advice to IT contacts/system administrators/ regular NRK users	• Access control to servers / public areas / systems and applications / mail / distribution lists / shared folders / rights and "right and best solution" • Rights / Folders / Distribution Lists / Shared Folders / Public Areas / Restricted Sites / Servers / AD / File Structure on Debugging in Rights / Access Control
User admin in HP Service Manager	Daily follow-up
Windows clients (WSUS)	Manage patching, approval, follow up and configuration

Table 11 - Used administration

2.6.3 Print

The agreement's validity is 5 years and a new procurement process will be re-launched when the current one expires. The agreement is currently with Canon.
Every branch office has a local print server, in addition to several servers at Marienlyst. The print servers run Print Spooler-service and the UniFlow service, which enable user logon to the printers with user access cards. The UniFlow service is integrated with Active Directory.

Service	Description
2nd/3rd Line support	
Contact with supplier (Canon)	• In case of failure of hardware and software • Follow-up Canon's deliveries (especially toners) • Order printers and equipment (toners, etc.)
Install printers	
Get printers online	• Reserve in DHCP • Reserve / check DNS • Check that the machine has the correct IP address • Check that the machine connects to UniFlow • Check print server (maprint01) to see if queues are correct (maprtXXX) if machine does not connect to UniFlow • Check that maprintuf01 has the correct setup, ping, etc. • Debugging
Monitoring	• Verify that the printers have received correct toners and correct address. • Verify that the printers have received the correct waste unit. • Remove paper jams, etc.
Training and informing	• User training • Information to users ("equipment is ordered", "service comes", etc.)
Rental of printers for productions	• Both preparation and on-site assistance • Agreement with Network-section on which IP to use • Agreement with Infrastructure-section on which server to use
Guest print	Print service for guests
Scanning	Document capture to the document archive
Relocating printers	Move printers, and make sure that equipment meets the needs where it's located
«Preventive» maintenance	Takes "walks" in the building and checks that equipment works

Table 12 - Print

2.6.4 License management

Service	Description
Microsoft	• License responsibility in NRK. • Coordination when new technology, training and consultants are introduced • Negotiation and management of license- and support agreement • Follow-up license usage • Revisions • Coordination internally regarding usage rights, license rules, etc. • Spread ownership of Microsoft licenses and agreements internally in NRK, but the bills are paid by IT
Adobe	• License responsibility in NRK • Negotiation and finalizing agreement • Maintenance of the agreement • Follow-up license usage • Assign licenses • Coordination internally regarding usage rights, license rules, etc.

	• Spread ownership of Adobe licenses and agreements internally in NRK, but the bills are paid by IT
Crayon	Coordination in NRK regarding license management, courses and consultants
Various licensed suppliers	Contact, responsible for appointments and invoices, etc.
Oracle	• License responsibility in NRK. • Coordination when new technology, training and consultants are introduced • Negotiation and management of license- and support agreement • Follow-up license usage • Revisions • Coordination internally regarding usage rights, license rules, etc. • Spread ownership of Oracle licenses and agreements internally in NRK, the bills are paid partly by IT

Table 13 - License management

2.6.5 Custom Excel-functionality

A developer with special expertise in Excel supports various departments (revolving radio/TV/network) with customized excel solutions.
The developer has good understanding of user experience and NRK, combined with extremely high competence in Excel.

Service	Description
Support	• 24/7 (extremely short response time in broadcast- and production-critical services) • MS Office-solutions (primarily Excel) • Program-departments' use of storage on server (“fellesområder”) in the migration project • Expertise in polls and score systems in television production
Development	• Support tools related to production planning and logistics in program production • Creates small systems for planning and registering working hours • Completes “Programregnskapet” annually with finance department • Organizes and cleans data for the analysis department
Training	Provides tailor-made training (mainly in Excel)
Commentator	Commentator support for TV productions (Sports and Entertainment)

Table 14 - Custom Excel functionality

2.6.6 Other

Service	Description
ITIL	Parts of ITIL are implemented in NRK: Incident and Change
Scrum	Client-management and Integration bus group use Agile and Scrum

Table 15 - Other

3 STRATEGY

Back Office provides internal services and system support to the organization. The section aims to facilitate for NRK's long-term strategy and requirements on “Tempo, Innovation, Competence and Network” through the following objectives (2017):

- Enable rapid changes
- Handle both cloud and on premise solutions
- Optimization of mobile devices (and different platforms)
- Emphasize good user experiences and user interfaces
- Automate workflow
- Invest in order to reduce the technical debt
- Secure all IT solutions – physical, cloud and on premise, ID, roles and sensitive data

Back Office also works with the initiatives from NRK’s Technology Plan (2017) relevant to its domain. Back Office seeks to upgrade its system portfolio with cloud solutions where possible. The procurement of a new ERP/financial system in 2017/2018 is in line with this strategy. Back Office is in the process of adjusting its services towards a project- and process-driven organization. This will alter the competence requirements, increase the need for architectural and integrational management in addition to project management. Several procurement- and change-projects are planned in the coming 2-5 years, which will require Back Office to deliver more technical assistance, project management, test management, integration services, SLA-requirements and supplier follow-up. Consequently, Back Office is working on improving competence within these areas. NRK is in the process of structuring initiatives around enterprise architecture, and it will be important for Back Office to participate in these initiatives.

The goals for the sub-domains of Back Office are as follows:

- IT-Security strives to keep NRK’s equipment secure and not subject to attacks, in addition to handling attacks that occur in a professional manner.
- Client Management seeks to implement Windows 10 during 2018, as well as obtain faster and more stable software deployment to PCs/macs/clients in the production value chain.
- User Administration seeks to automize the workflow of user accounts and access control, and will participate in the IAM project. The goal is to establish holistic access control in 2018.
- The Service Platform team is working to expand functionality (currently only integration bus functionality, but aims to handle file exchange). NRK is working to establish a solution for operating and maintaining this service internally, but will also continue to procure external development.

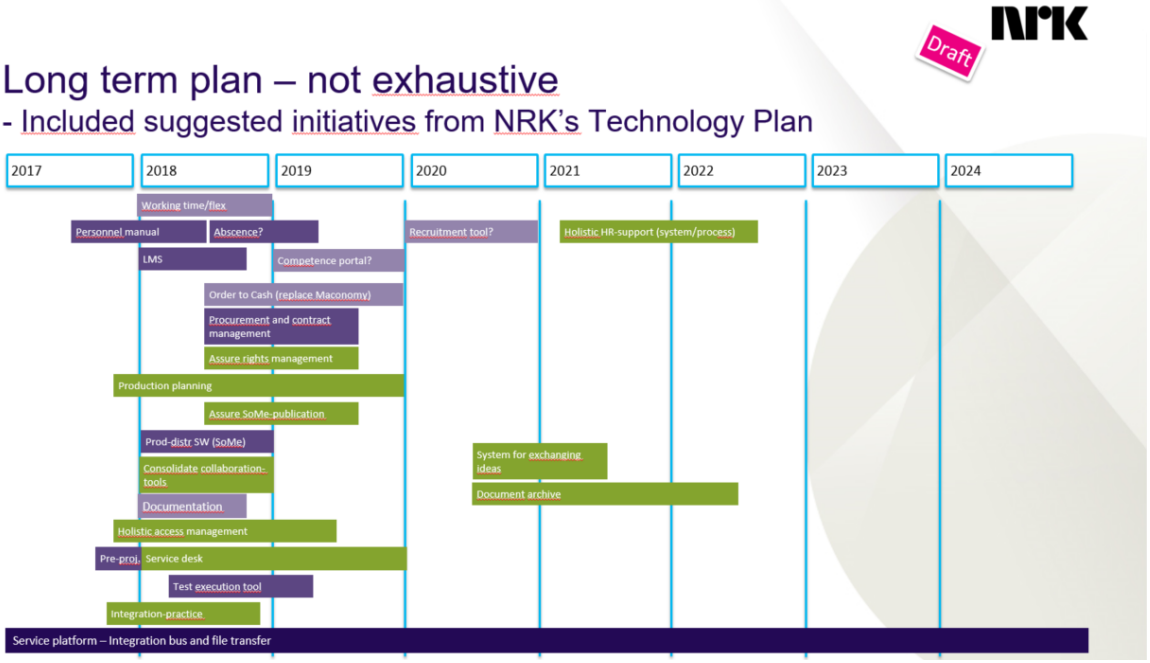

Figure 2 - Long term roadmap for Back Office, included suggested initiatives from NRK's Technology Plan

4 PROJECTS

Project	Timeline	Description
Implementation of new finance system	Ongoing	UBW, delivered by EVRY. PwC is assisting NRK in the implementation.
Integration platform/ Service platform	Ongoing	Integration bus and file transfer. ("Tjenesteplattformen")
New ITSM solution	Ongoing	Pre-project
Implementation of new personnel hand book		Responsible for the technical parts of the new personnel handbook.
IAM (Identity Access Management)		Pre-project to start Jan 2018
Test management and tool for test management and execution	Not started	Plan for preparation of test policy and acquiring test management-tool in 2018.
Travel and expenses	Ongoing	RFP published in December 2017, expected contract and implementation Q2 2018
Documentation-tool assessment	Not started	Assessment of which tool to use for documentation. Confluence is currently used, but not formalized as mandatory tool
LMS (Learning Management System)	Not started	
GDPR related adaptions		Adaptions to existing system portfolio in order to ensure compliance with GDPR. Unclear scope and responsibility.

Windows 10	Ongoing	Pre-projects Q3/Q4 2017, expected implementation 2018. Handled by Client Management-group
Client handling system	POC in progress	RFI/RFP in 2018, possible replacement or consolidation of Lanrev/Filewave
Cloud storage		Focus on OneDrive
Assessment of VPN		Refresh the policy
Upgrade of automated user-creation in AD	Ongoing	
Resource and production planning	Started in 2018	End-to-end process analysis in NRK 2020-program for coordinating initiatives and projects. Can initiate changes in systems portfolio (e.g. Mediapulse)
Project Economy and Finances	Started in 2018	End-to-end process analysis in NRK 2020-program for coordinating initiatives and projects. Can initiate changes in systems portfolio (Maconomy)

Table 16 - Projects

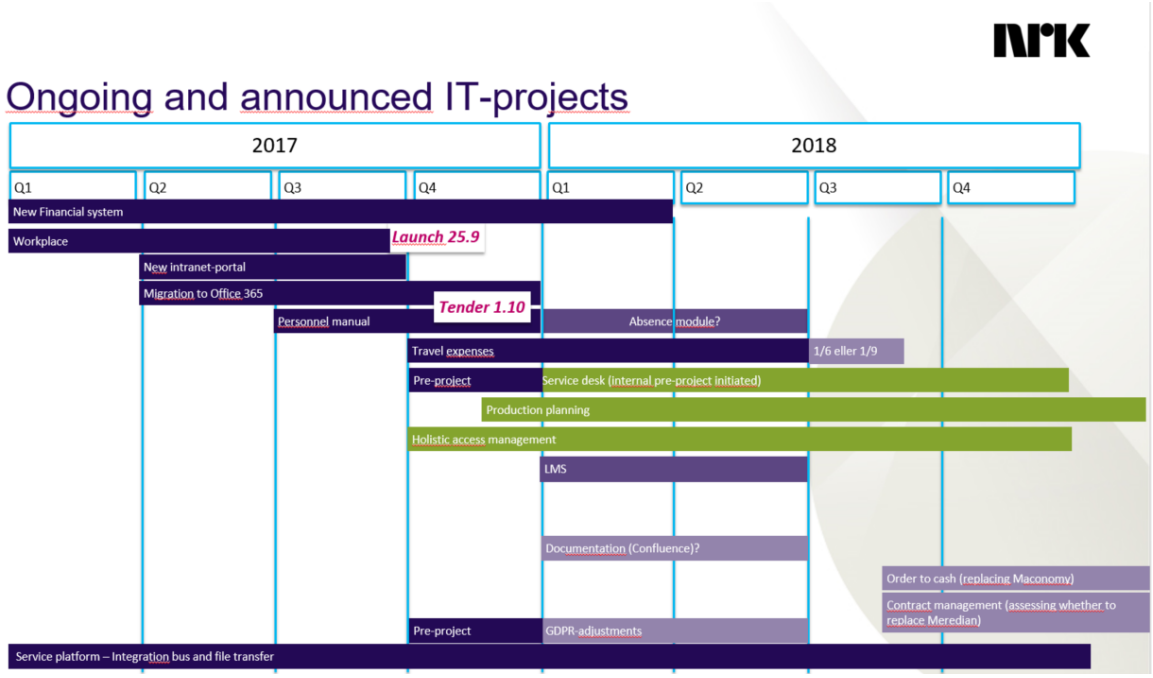

Figure 3 - Ongoing and announced IT-projects related to the Back Office section

5 SERVICE LEVELS

The majority of Back Office's services labelled 3 or 4, i.e. support systems or "other that are not defined as critical for production or distribution in NRK with guaranteed uptime weekdays between 8 and 16. Many of the services are operated with limited staff, and there are no formally defined SLAs.

Most of the employees in Back Office have both long experience and good knowledge of NRK, they provide high level of service and know when it is important to make an extra effort to prevent critical systems from failing.

Table 17 - Definition of error categories and the related response time, from the SSA-V contract for the procurement of Payroll-system, shows an example of the service levels NRK require from external vendors – in this case, the procurement of a SaaS.

Category	Definition	Response time	Bugfix
A – Critical errors	Unable to access critical functionality, which has significant financial consequences for the organization.	30 minutes after receiving the error message, in the service desk's working hours. 60 minutes for errors discovered by the vendor, outside of the service desk's working hours	Continuous bugfix until error is corrected. Resolution time one hour Error status is reported for every change in status or every fourth hour
B – Serious errors	Parts of the organization is unable to access important functionality, or an end-user has lost access to critical functionality.	60 minutes after receiving the error message, in the service desk's working hours.	Continuous bugfix until error is corrected. Resolution time 24 hours Error status is reported for every change in status or on a daily basis
C – Less serious errors	The systems are running, but there is an error in a non-vital function and/or it affects only a small number of end-users.	Eight hours after receiving the error message, in the service desk's working hours.	Ongoing bugfix during working hours until error is corrected. Resolution time 15 working days Error status is reported for every change in status or in status meetings

Table 17 - Definition of error categories and the related response time, from the SSA-V contract for the procurement of Payroll-system

6 SPENDING AND BUDGET

This information will be disclosed at a later stage in the process.

7 EMPLOYEES

Tilknytning (T)	Stillingskode (T)	Stillings%	Ansiennitet	Alder	Bakgrunn
Fast	Overingeniør	100,00	1985	55	Ingeniør
Fast	Overingeniør	100,00	2008	43	ingeniør
Fast	Avdelingsingeniør	100,00	1990	57	IT-tekniker
Fast	Overingeniør	100,00	1992	54	IT-tekniker
Fast	Overingeniør	100,00	1999	51	IT-tekniker
Fast	Avdelingsingeniør	100,00	1989	48	ingeniør
Fast	Rådgiver	100,00	1991	46	IT-tekniker
Fast	Avdelingsingeniør	100,00	2008	36	ingeniør
Fast	Avdelingsingeniør	100,00	2003	40	ingeniør
Fast	Rådgiver	100,00	1983	60	it-tekniker
Fast	Overingeniør	100,00	1986	58	it-tekniker
Fast	Overingeniør	50,00	1990	46	it-tekniker
Fast	Overingeniør	100,00	1985	55	ingeniør
Fast	Journalist	100,00	1977	56	it-tekniker
Fast	Avdelingsingeniør	100,00	1984	52	Ingeniør
Fast	Overingeniør	100,00	1991	41	ingeniør
Fast	Rådgiver	100,00	2001	53	ingeniør
Fast	Avdelingsingeniør	100,00	2000		ingeniør
Ikke ansatt	Honorarmottaker/ikke ansatt	0,00		39	External
Ikke ansatt	Honorarmottaker/ikke ansatt	0,00		33	External
Ikke ansatt	Honorarmottaker/ikke ansatt	0,00		44	External
Ikke ansatt	Honorarmottaker/ikke ansatt	0,00		44	External
Ikke ansatt	Honorarmottaker/ikke ansatt	0,00		47	External
Ikke ansatt	Honorarmottaker/ikke ansatt	0,00		47	External
Ikke ansatt	Honorarmottaker/ikke ansatt	0,00		59	External
Ikke ansatt	Honorarmottaker/ikke ansatt	0,00		32	External
Ikke ansatt	Honorarmottaker/ikke ansatt	0,00		37	External
Ikke ansatt	Honorarmottaker/ikke ansatt	0,00		37	External
Ikke ansatt	Honorarmottaker/ikke ansatt	0,00		35	External
Ikke ansatt	Honorarmottaker/ikke ansatt	0,00		47	External

Table 18 - Employees

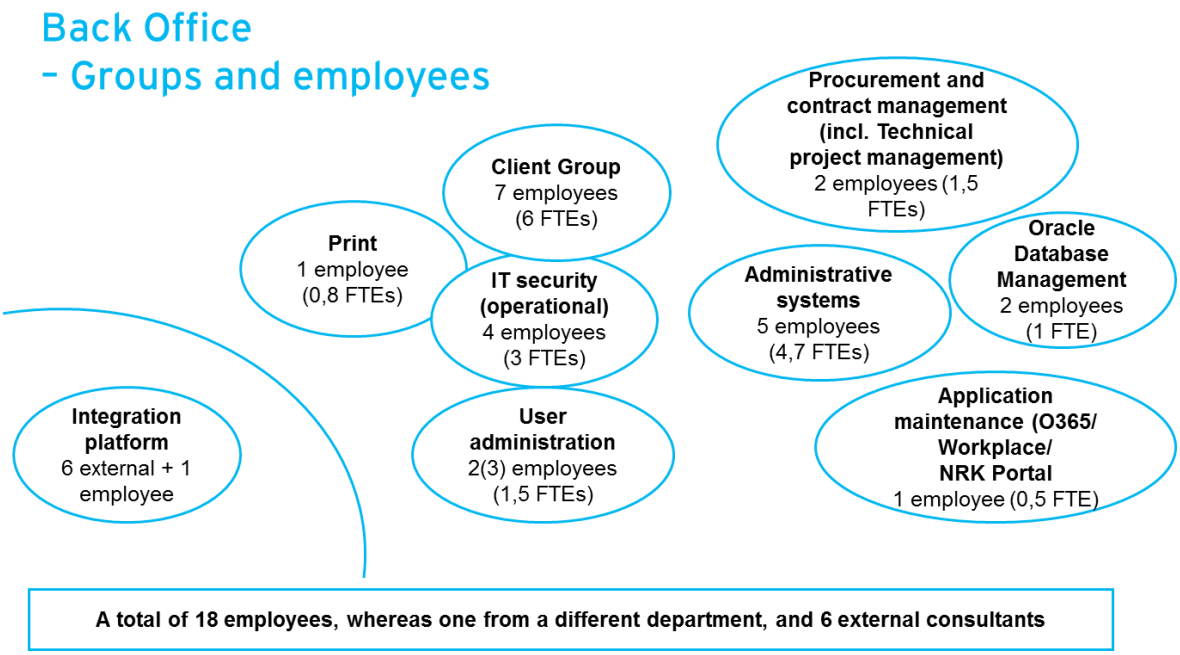

Figure 3 - Groups and employees

NRK

What competence will we need in a five years perspective?

Cloud Scalability (number of employees and systems) Increased number of systems/applications Icreased pace of replacement and change Relocation of the headquarters (Marienlyst)	• Roles: managers, service owners, architects • Competence: • kompetanse: procurement competence • Organizational structure that tolerates change • IAM • Scalability (number of employees and systems) • The consequences of relocating the headquarters • Increased number of systems – better structure • Test strategy • Integration strategy

Table 19 - Necessary competencies in a five year perspective

8 NECESSARY HARDWARE, SOFTWARE AND FACILITIES

8.1 Systems

See attachment C.2- Back Office Systems.

8.2 External services

- DBWatch services
- Error handling outside regular hours (8-16)
- «Datavakten» (an IT-service) is responsible of contacting DBWatch in case of errors.

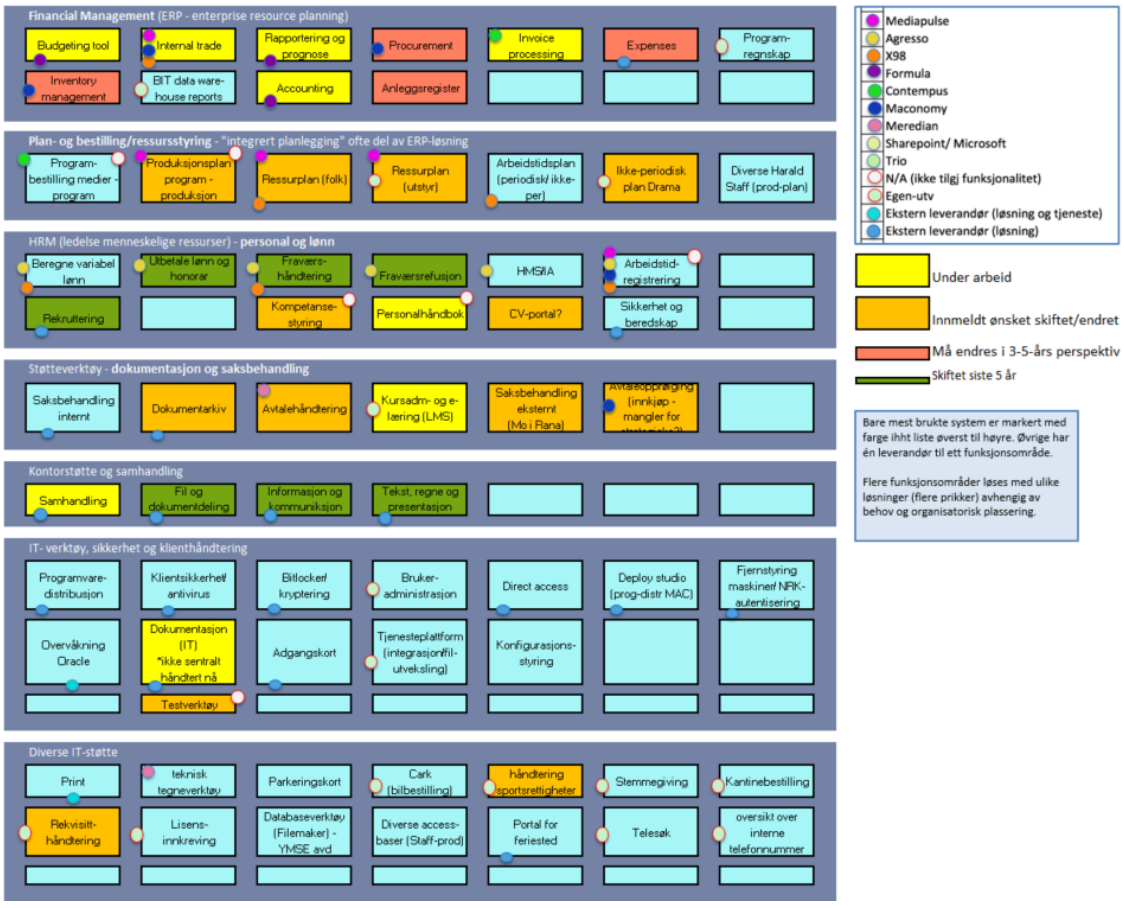

Figure 4 - Mapping of Back Office's systems

9 GLOSSARY

Explanation of NRK-specific words and concepts used in the appendix

Word/Concept	Description
Back office	The name of the section. In Norwegian: "Fellessystemer"
Mediapulse	External system for production planning, both employees and hardware/equipment. Supplied by Xytech
NRK Portalen	NRKs Internal information channel (Intranet)
Guri	To be replace by Potion (solution for video search and web-view)
MediaDB	Media database
Maconomy	Financial solution supporting project calculation and economy
Current	Travel and subsistence claims
Contempus	Order-to-pay and invoice (to be replaced 2018)
CARK	Booking-system for cars
EBI	Solution for handling and issuing access cards
Formula	Financial system (to be replaced 2018)
IT-contact	Role/ function responsible for IT-equipment in non-IT-departments
NRK Skole	Database for handling programs for use in primary (public) schools
Bifrost	
ROAD	Solution for TV- and radio-production equipment
DMA	Solution for Digital Music Archive
Carrydox	Analogue to PDF document conversion
Vizrt	Television graphics
Kantina	Order-system for food and beverages
UBW	Unit4 Business World – ERP solution for HR and Finance

Table 20 - Glossary

10 ATTACHMENTS

Attachment	Description
Attachment C.1 – Mapping of Oracle-services	Mapping of systems running on Oracle-databases.
Attachment C.2 – Back Office Systems	List of all systems where Back Office's leader is system owner

Table 21 - Attachments