A circular inset image on the left side of the page shows a modern, minimalist table with a white top and a single, angled, light-colored leg. The background of the image is a gradient of blue and red with a pattern of fine, concentric white lines.

THE PATH TOWARDS A CIRCULAR CATEGORY OFFICE FURNITURE

A CHANGE IN PERSPECTIVE: FROM A
CIRCULAR PRODUCT
TO A CIRCULAR CATEGORY

Made possible by:



Ministerie van Binnenlandse Zaken en
Koninkrijksrelaties



Rijkswaterstaat
Ministerie van Infrastructuur en Milieu



Ministerie van Infrastructuur en Milieu

'Circularity facilitates the permanent consequences of temporality'

- T.M. Rau -

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EXECUTIVE SUMMARY

The various ecological and economic benefits of a circular economy, such as the preservation of raw materials, the reduction of CO2 emissions, employment and economic potential¹, have prompted the Dutch government to set goals for the realisation of such an economic system in several policy memoranda. Partly as a result of this, initiatives have been launched in the Netherlands in order to further develop theoretical knowledge and put this knowledge to the test. Procurement is often regarded as the key to setting this transition in motion.

The category Office Furniture is the commissioner of this report and is responsible for the government-wide procurement of office furniture. Organisationally it falls under the Procurement Implementation Centre (in Dutch *Inkoop Uitvoerings Centrum*) of the Directorate-General for Public Works and Water Management (in Dutch *Rijkswaterstaat*). The category Office Furniture intends to work within its sphere of influence on the transition to a circular economy. This can be achieved by activating its various roles: as a client, as a user and as an organisational unit in interaction with other organisational units, such as Policy and Facilities.

The assignment for this report is the first step in creating a vision, investigating opportunities and making recommendations for a circular category. It is recommended that the results of this report be assessed in a series of pilots, using the insights gained to review and refine the frameworks. In addition to a survey of the influence and potential of circular operations within the category Office Furniture, the report contains an analysis of the organisational environment, sets goals and objectives, and identifies potentially successful routes for implementation.

The definition of a circular economy as expressed by the Ellen MacArthur Foundation, forms the starting point for this report:

*'A circular economy is one that is restorative and regenerative by design, and which aims to keep products, components and materials at their highest utility and value at all times, distinguishing between technical and biological cycles.'*²

The following cycles of a circular system were defined: maintain, redistribute, repair, refurbish, repurpose, recycle. By using these different cycles, products and materials are put to use for as long as possible. Generally speaking, (but not always!) the highest possible value is retained by adhering to the original form or function as much as possible. These cycles, in relation to office furniture, form the basis of the analyses in this report.

A common misconception is that organisations can realise circular operations by adopting circular procurement, and that this is equivalent to purchasing new, circular products. That is not the case, however. Circularity concerns a wider form of operations, in which responsibility is assumed not only for what is already available, but also for proper use and for one's own influence on achieving optimal subsequent cycles. This requires other roles, activities and contracts than currently available.

In addition to the technical requirements imposed on products, such as the possibility to make repairs or modifications, it requires structures and processes that guarantee product life-extending activities and optimal use. These range from repair and refurbishment to logistics, records and furniture asset management. These activities are outsourced, procured or form part of an organisation's own operations.

The aim is to make the category Office Furniture a circular one, in which preservation and value of materials is guaranteed by purchasing as little new furniture as possible and only procure in a future-proof manner. This means:

1. If the requirements remain the same, fulfil these as much as possible by using existing furniture, taking the actions and measures necessary to extend the service and technical lives of products;
2. When fulfilling new requirements, use material that is already in circulation, both inside and outside the organisation;
3. Assess new products against the strictest circularity requirements for product, process and valuation;
4. Optimise use of products, components and materials in subsequent cycles, taking all environmental effects into account.

¹ TNO Report (2013). *Opportunities for the circular economy in the Netherlands*, p.3. Commissioned by the Ministry of Infrastructure and the Environment.

TNO estimated the economic potential of a circular economy in the Netherlands at 7.3 billion per year and predicted a possible increase in employment by 54,000 jobs.

² Ellen MacArthur Foundation (2016). *Circular Economy*. Cowes, Isle of Wight, United Kingdom. The following website was consulted: <http://www.ellenmacarthurfoundation.org/circular-economy> (April 2016).

In the short term, the greatest economic potential from a circular category lies in the decrease in the number of workspaces within the Central Government. It is estimated that, every year until 2020, 5,000 workspaces will become surplus within the Central Government.^{3,4,5} (The optimisation of) internal reuse will create potential savings of approximately € 7 million⁶ per year for the entire Central Government. Reassignment goes beyond the traditional conception of reuse or second-hand furniture. There are plenty of examples where office furniture is reassigned in a way that meets the functional and design requirements of the user and where the users perceived the furniture as 'new'.

Extending the service life of existing furniture is a second source of short-term and medium-term savings. In general, it may be said that the current period of use of furniture can be extended by 4 to 8 years, provided that this is facilitated by additional services. This creates additional potential savings of 1.2-4 million per year⁷. Combined, this can result in total savings for the Central Government of **€ 8-11 million per year**.

The process modifications required in the initial stages ensure that savings from service life extensions are also realised for the long term. The final objective of circular operational management and furniture with circular characteristics is to keep the procurement of new furniture with new materials unfit for high value reuse to a minimum.

The estimated savings are exclusively based on the procurement of (furniture for) workspaces. The expenditure on workspaces only accounts for 25-30% of the total budget for office furniture. Service life extensions of other types of furniture, such as conference furniture, lounge areas and lockers, create an additional savings potential amounting to a few million euros. Between 2013 and 2015 the annual savings realised through the State Movable Property Services (in Dutch *Domeinen Roerende Zaken*) amounted to approximately €6 million.^{8,9} The savings on workspaces accounted for roughly 25% of the total savings.

Factors relating to the immediate surroundings play a decisive role in identifying potentially successful means of mobilising this potential. Amongst other things, the difference in tasks and sphere of influence between category management (Procurement) and its clients (Facility Management or Operations), is relevant for a circular category Office Furniture.

The category is an important player in defining the procurement strategy and - in interaction with its clients - the purchasing needs. However, its influence on the requirements is limited. Goals are often set out at policy level within the Central Government, while budgets are managed at implementation level and 'he who pays the piper calls the tune'.

A growth model was selected to serve as a strategy towards a circular category, both for the category and its suppliers. Starting by circulating existing products with linear characteristics. Meanwhile, striving to increase the share of products with circular characteristics that can actually close the cycles. This will produce results and create savings in the short term and give the Central Government and market operators time to develop new activities.

An important point about the interaction with the market is that solutions may be found by parties other than known, established parties (suppliers of office furniture). Many of the vital activities are already being carried out by specialised companies or being developed by young, innovative start-ups.

The advice is to work step by step towards a circular category in a way that provides learning points for the organisation and market operators. The leading question in deciding which activities to outsource and which ones to develop in-house should be: how can the Central Government best remain in control and strive to achieve the best results? It is important to be open to ideas and market developments in the next stages and, at the same time, remain in control by being committed and by participating actively.

This number is based on an estimate based on figures from the following sources: (see Appendix 1 for the calculation)

3 Ministry of the Interior and Kingdom Relations (2015). *2014 Annual Report of the State's Conduct of Internal Management*, p. 52. The following website was consulted: <https://www.rijksoverheid.nl/documenten/rapporten/2015/05/01/jaarrapportage-bedrijfsvoering-rijk-2014> (February 2016).

4 Ministry of the Interior and Kingdom Relations (2014). *Central Government Labour Market Analysis: Looking Ahead to 2016 and 2020*. The following website was consulted: <http://kennisopenbaarbestuur.nl/rapporten-publicaties/arbeidsmarktanalyse-rijk-een-voortuitblik-naar-2016-en-2020/> (February 2016).

5 Ministry of the Interior and Kingdom Relations, Directorate-General for Governance and Kingdom Relations, Public Service Labour Affairs Department (2015). *Working in the Public Sector 2015, Trends and Figures*. The following website was consulted: <https://www.rijksoverheid.nl/documenten/rapporten/2015/09/25/werken-in-de-publieke-sector-2015-trends> (February 2016).

6 See Appendix 1 for the (method of) calculation.

7 See Appendix 1 for the (method of) calculation.

8 Ministry of the Interior and Kingdom Relations, Management State Property Service (2015). *2014 Annual Report of the State's Conduct of Internal Management*, p. 38. The following website was consulted: <https://www.rijksoverheid.nl/documenten/rapporten/2015/05/01/jaarrapportage-bedrijfsvoering-rijk-2014> (February 2016).

9 A reduction amounting to an average of 13,000 workspaces per year within the Central Government has led to savings between 2013 and 2015 for the State Property Service, and this without implementing activities such as refurbishment or storage of discarded furniture. The potential savings in this report are based on 5,000 excess workspaces per year and a higher percentage of reassigned furniture, made possible by adapting processes and activities.

Relevant topics for the implementation include: service and technical life extension, defining functional requirements, furniture asset information, internal circulation of furniture, maintenance, repair, logistics and storage. The category can work on:

- Incorporating the new vision and goals in new framework agreements for Office Furniture:
 - impose requirements on design, material, production, packaging, logistics;
 - strive for a mix of new and reassigned furniture;
 - gain insight on the asset situation;
 - having suppliers reassign at least their own brands.
- In addition to the current framework agreements for Office Furniture, arranging supplementary framework agreements for complementary services:
 - preventive & corrective maintenance;
 - storage & logistics
- Creating support by informing clients and other stakeholders about the potential and success stories.

Outside the sphere of influence of the category, this means:

- A policy for the internal circulation of furniture (a procure and delivery obligation, reducing the budgets for the procurement of new furniture);
- Level of support among facilities departments and end-users (reassigned furniture is as good as new and often less expensive);
- Resources for logistics, maintenance and the temporary storage of surplus assets.

The main success factors for the transition from a linear to a circular category are:

- Firmly establishing knowledge of and support for circularity within the organisation;
- Pooling data of the existing assets and aligning the demand for and supply of surplus furniture. This could be realised by a central organisation or by each individual Group Service Provider (in Dutch *Concern Dienstverlener*)¹⁰;
- Embedment in as many policy and procedural documents as possible, such as the category plan and ministerial policy;
- A comprehensive approach, also in budget terms, between Procurement and Facilities in which the entire service life cycle of the furniture is managed;
- Interdepartmental consultations in order to find solutions for possible hurdles;
- Reviewing a number of financial 'rules', such as:
 - the strict separation between investment and operating budgets, which now prevents research budgets from being made available;
 - the transition for all ministries to an accrual

accounting system as opposed to a cash accounting system, whereby ministries are praised for and incentivised by the fact that they use less cash resources than budgeted. In the current situation savings are automatically cut from current and future budgets and therefore there is no positive incentive to save.

The most important thing is to start. It is possible today to orient towards insight into and reassignment of assets. Tenders and projects can be used to scan the potential within the organisation and the maturity of the market. The category can create opportunities by, on the one hand, using lines of communication within the Central Government for obtaining information related to potential, goals, status and examples and, on the other hand, by being actively involved as a client and user.

¹⁰ Group Service Providers are the bodies responsible for the procurement for individual ministries. They are direct clients of the category Office Furniture.

INTRODUCTION

INTRODUCTION

Context of this report

Within the space of a few years, the circular economy has become an important topic for the Dutch government and the corporate sector. Nationally and internationally, encouraging other procurement techniques is regarded key in the transition towards a circular economy. For authorities, procurement mechanisms are often the only hard instrument for controlling the market. Partly as a result of this, the Central Government concluded a Green Deal Circular Procurement in November 2013 in which it undertakes to carry out a number of pilot projects. Additionally, the Lower House passed a motion in the autumn of 2015 which calls on the government to make 10% of its procurement circular.

Within the context of this Green Deal, the Category Manager for office furniture received a request to carry out a circular procurement pilot. After examining the issue and previous examples, it was decided not to start with a stand-alone pilot. Rather, the need arose for an overall vision and strategy for circular procurement of office furniture. A pilot would serve to assess this vision and strategy, as part of the route.

A survey was carried out with Turntoo in order to analyse the entire process, from vision to full implementation. From this an approach was adopted consisting of four stages:

1. Develop an inspiring long-term Circular Procurement objective within the category office furniture.
2. A road map for achieving the long-term objective by way of sub-objectives.
3. A successful pilot that generates 'proof points' to support these developments internally and externally and, at the same time, provides learning points for the own organisation and market operators.
4. Develop an internal organisational structure and instruments that are supported by the organisation, enabling it to independently pursue and expand on this issue.

The category wishes to work in stages, with concrete interim results. Partly to ensure sufficient support, but also to firmly establish learnings within the organisation. The process can be represented as follows:



Figure 1: Stages, from the initial need to circular procurement to embedment in the organisation

ASSIGNMENT & ELABORATION

This report is an elaboration of the second stage: drawing up a vision and road map to guide the follow-up activities. The assignment for this report consisted of stages 1 and 2, and cover:

1. Long-term objective

A long-term Circular Procurement objective within the category Office Furniture. Shaping the vision and goals of what a circular economy means within the category Office Furniture, consisting of several parts:

- An ideal circular model for the category Office Furniture, including its underlying principles;
- How circular principles contribute towards improving operations of the category Office Furniture;
- The social contribution of a circular procurement model;
- The aim to procure completely circular within a period of X years.

2. Road map

These vision and goals can be translated into a series of attainable sub-objectives which, taken together, provide a scope for action in a step-by-step plan. The road map shows how the long-term objective can be achieved by way of sub-objectives and interim results. It includes:

- The various stages in which this objective is achieved;
- Important milestones and relevant indicators for measuring progress.

Figure 2: Assignment for this report.

It became increasingly clear during the assignment that the real long-term vision does not lie in a category committed to circular procurement, but in a circular category. In a circular category, operational processes are organised in such a way that maximum added value is created by closing cycles, both internally and externally. Procurement activities then become part of a larger organisational system, with a clear correlation to other operations.

This report therefore emphasises the overall strategy to implement circular operations at category-related levels such as policy, facilities and use. A clear distinction is made between a circular product, circular procurement and a circular category.

ORGANISATION & METHODOLOGY

This report is composed by a project team consisting of the Category Manager and Contract Manager of the category, Procurement Specialists, experts from various government bodies, PIANOo (the Dutch Public Procurement Expertise Centre) and Turntoo (architect of the new economy). The members of the project team have played an essential role in collecting the correct information, in addition to their valuable substantive contributions.

The following activities have given shape to the study and resulted in the analyses and conclusions in this report:

- Sounding board sessions with the project team in order to formulate and assess the initial versions of vision, definitions, goals and objectives;
- Interviews with experts inside and outside the Central Government; to investigate internal processes and to determine the economic potential and successful routes of the road map;
- A round table discussion with a group of approximately 20 internal stakeholders; to identify relevant issues, roles and possible routes, coordinate the levels of ambition and share insights;
- Formulate questions for in-house surveys in order to collect information and estimate the potential of a circular category;
- Study of previous cases and analyses of a circular economy in order to include as much as possible the latest state of knowledge regarding this issue.

The study was restricted to the category Office Furniture, its activities and interested parties. If no government-wide information was available, the position of the Directorate-General for Public Works and Water Management (in Dutch *Rijkswaterstaat*, from now on referred to as RWS) was taken as a starting point.

READING GUIDE

1. Chapter 1 outlines the paradigm of a circular economy and the social, political and economic interests within which this report was drawn up.

2. Chapter 2 relates the circular economy specifically to the office furniture segment. It includes a description of ideas and definitions which serve as a basis for this report.
3. Chapter 3 pictures the internal processes related to the category Office Furniture as they are currently organised.
4. Chapter 4 then gives a first indication of the market maturity as far as circular economy is concerned. This chapter reflects on previous examples, the lessons that can be learned from them and analyses regular circular business models.
5. Chapter 5 sets out the potential of the various parts of a circular category from the perspective of the current organisation and activities, both financially and in terms of sustainability and efficiency.
6. Chapter 6 defines the goals, main objectives and sub-objectives for the category from the perspective of its current status and potential.
7. These objectives are worked out into a strategy for a circular category Office Furniture in Chapter 7, including a risk analysis.
8. Chapter 8 discusses the obstacles and critical success factors for a circular category.
9. The implementation of the strategy is outlined in Chapter 9, which also includes the road map.
10. Chapter 10 looks ahead at and makes recommendations for the future.

POLITICAL & ECONOMIC IMPACT

TOWARDS A CIRCULAR ECONOMY

The most commonly used definition of a circular economy and the description on which many other definitions are based is that of the Ellen MacArthur Foundation:

*'A circular economy is one that is restorative and regenerative by design, and which aims to keep products, components and materials at their highest utility and value at all times, distinguishing between technical and biological cycles.'*¹¹

In all closed systems, including the current economic system, everything is inter-related and interdependent. A system change therefore leaves no player untouched. In the ground-breaking report by the Ellen MacArthur Foundation, which was the first one to carry out a study of the content and impact of a circular economy, a circular economy is characterised by five basic principles:

1. Design out waste;
2. Build resilience through diversity;
3. Work towards energy from renewable sources;
4. Think in systems;
5. Think in cascades.¹²

ECOLOGICAL AND ECONOMIC NECESSITY OF A CIRCULAR ECONOMY

Along with climate change, raw materials scarcity is one of the biggest challenges for the next ten years. The UNEP report aptly expresses the sense of urgency as follows

*'Global resource consumption is exploding. This is not a trend that is in any way sustainable. We must realise that prosperity and well-being do not depend on consuming ever-greater quantities of resources.'*¹³

Changing the current linear take-make-waste model into a circular model in which raw materials are reused in endless cycles is one of the possible solutions for making our economy and society future-proof, in addition to an indispensable contribution towards helping to reduce the climate change problem.

POLITICAL MOTIVES FOR A CIRCULAR ECONOMY

The depletion of reserves in easily accessible sources leads to ever-greater environmental damage and growing investments in order to meet increasing demand. The resulting price volatility of raw materials puts greater pressure on the raw material supply security for businesses and governments. For instance, in 2011 the influential think tank The Hague Centre for Strategic Studies wrote:

*'Geopolitical and geo-economic trends [...] lead us to conclude that raw material supply security has become a strategic national interest. This makes it necessary to define a Dutch raw materials strategy.'*¹⁴

The need to become nationally independent of international tensions by guaranteeing our own raw material (supply) security is felt at several levels of government. However, the current economic system is not sufficiently resilient and adaptable, making it susceptible to crises in the chain. The Netherlands, for instance, has limited or no access to new, extractable raw materials and is therefore vulnerable to international developments. At the same time, geopolitical trends create an opportunity, namely to create a raw materials hub with national industries.

A shift can be observed in the political establishment. In 2012 the Dutch government included the objective of a circular economy in its coalition agreement. Its goals with respect to the circular economy were set out in several government letters (Resource Memorandum, Sustainability Agenda, Green Growth).

¹¹ Ellen MacArthur Foundation (2016). *Circular Economy*. Cowes, Isle of Wight, United Kingdom. The following website was consulted: <http://www.ellenmacarthurfoundation.org/circular-economy> (April 2016).

¹² Ellen MacArthur Foundation (2012). *Towards a circular economy (Vol. 1): economic and business rationale for an accelerated transition*. Cowes, Isle of Wight, United Kingdom. The following website was consulted: <http://www.ellenmacarthurfoundation.org/publications> (March 2016).

¹³ UNEP (2011). *Decoupling natural resource use and environmental impacts from economic growth*. UNEP & International Resource Panel. The following website was consulted: http://www.unep.org/resourcepanel/decoupling/files/pdf/decoupling_report_english.pdf (April 2016).

¹⁴ The Hague Centre for Strategic Studies (HCSS) (2011). *Towards a Raw Materials Strategy*. Commissioned by the Ministry of Foreign Affairs, p. 11.

ECONOMIC POTENTIAL OF A CIRCULAR ECONOMY

In the autumn of 2015 the Lower House passed a motion which obliges the Central Government to make 10% of its procurement circular¹⁵. However, this motion is something of a carte blanche as there is no clear definition of what circular procurement entails.

In 2012 the Ellen MacArthur Foundation published its first report in cooperation with McKinsey. In this report the economic potential of a circular economy in Europe was estimated at € 500-600 billion¹⁶.

In 2013 the Lower House ordered TNO to calculate the effects for the Dutch economy. This revealed a market value of € 7.3 billion per year. Translated into possible job growth, this comes down to 54,000 jobs¹⁷.

¹⁵ Motion tabled by the MPs Cegerek and Van Veldhoven (October 2015). The following website was consulted: <https://www.parlementairemonitor.nl/9353000/1/j9vvij5epmj1ey0/vjylcaobs2z7> (February 2016).

¹⁶ Ellen MacArthur Foundation (2012). *Towards a circular economy (Vol. 1): economic and business rationale for an accelerated transition*, p 7. Cowes, Isle of Wight, United Kingdom.

¹⁷ TNO (2013). *Opportunities for the Circular Economy in the Netherlands*. Commissioned by the Ministry of Infrastructure and the Environment. TNO estimated the economic potential of a circular economy in the Netherlands at 7.3 billion per year and predicted a possible increase in employment by 54,000 jobs.

CIRCULAR ECONOMY & OFFICE FURNITURE

FROM THEORY TO PRACTICE

Because of its underlying idea of reassigning materials, a circular economy is often compared with various forms of recycling, as they are known in today's society. However, optimising a linear waste system by, for example, consuming fewer raw materials or recycling a product into a lesser function with fewer possibilities for reuse (a building becomes asphalt or furniture becomes car upholstery) differs fundamentally from a system based on preservation, high-value reassignment and closed cycles. In the latter case, products, components and materials always retain their highest utility and value.

A circular economy is now still 'a coherent system of models and theories that form a framework within which "reality" is analysed and described' (a paradigm).¹⁸ So far, there are no known examples of a fully implemented circular economic system, just circular chain segments, such as paper, PET bottles, glass, tin and carton.

Because of its size and complexity, a circular economic system cannot be implemented isolated, but only by integrating a considerable part of the chain or segment. In an ideal situation, the entire chain (up to and including the mines (sources) is committed since only then will it be possible to retain value (in all its forms) at every new step. It is sometimes jokingly said that it 'would be easier to design a new, transparent system than to transform the current one'.

From their own position, everyone can exert influence in their own sphere. It is then useful to know which

players come before and after one's position in the chain in the current situation and which players hold similar positions. The category Office Furniture, its clients and users are positioned on the right-hand side of the traditional chain, as shown in the simplified representation below.

VARIOUS CYCLES

In reference to a circular economy, there is often talk of 'closing' circles, chains or cycles. This means that used products re-enter the system by one of the routes - shown in the figure below - in such a way that they at least retain the number of applications they had in their original form. It is essentially the original meaning of the word 'recycle', before this word was used for low-value assignment and degraded to 'down cycle'.

Setting up high-value cycles in a closed system does not necessarily mean that a product will remain in the same function or segment. Cross-pollination may occur, as it does in natural cycles (compost does not always nurture the same plant). The function of a chair can change in its second, third, etc. life: the chair can become part of a building, electrical device or something else.

Cycles can be described in different ways. The most extensive one is given in a study by Utrecht University, in which 8 Rs are described, starting with Refuse: no purchase or demand¹⁹.



Figure 3: The position of the category Office Furniture in the linear chain.

¹⁸ Source: Wikipedia. The following website was consulted: <https://nl.wikipedia.org/wiki/Paradigma> (December 2015).

¹⁹ Vermeulen, W. J. V., Witjes, S., Reike, D. (2014). *Recommendation on a Framework for Impact Assessment for Circular Procurement*.

The following website was consulted: <http://research.economicboardutrecht.nl/onderzoeksbibliotheek/2014-advies-over-een-raamwerk-voor-impactmeting-voor-circulair-inkopen-uu> (March 2016).

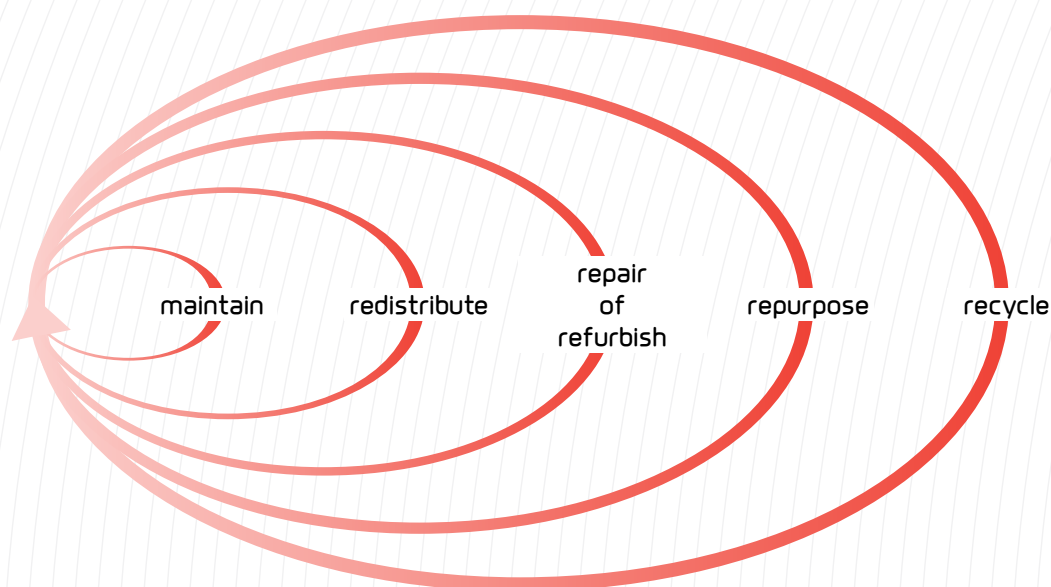


Figure 4: The various cycles of office furniture in a circular system.

For the scope of the category Office Furniture, the various elaborations have been summed up in five cycles, shown in Figure 4. The significance of each cycle is explained in Figure 5. These cycles can be facilitated both inside and outside one's own organisation: as an

internal or external cycle. In this way, a product can take on a second life in another department within the same organisation, followed by a third life outside the Central Government, only to return in the organisation in a fourth life in the same or another form.

Cycle	Activity	Related Term	Example
maintain	preventive maintenance		a chair remains a chair
redistribute	new user	reuse, reassign	a chair remains a chair
repair	corrective maintenance		a chair remains a chair
refurbish	change the appearance	change the appearance	reupholster a chair
repurpose	repurpose with new function		a chair becomes a hall
recycle	at material or component level		a chair becomes kg steel

Figure 5: Explanation of the various cycles of office furniture in a circular system.

Each cycle consists of different activities and roles:

- **Maintain:** This can be done through routine maintenance and (standard) cleaning, in combination with regular, more thorough maintenance and (specialist) cleaning. Usually done at the location where the products are used.
- **Redistribute:** To reassign a product to another location. This requires a logistical party and, ideally, a storage facility if supply and demand are not perfectly aligned. Can be supplemented with specialist maintenance and cleaning.
- **Repair:** Repair work is carried out when a user or cleaner signals that a product is defective. The product must then usually be removed from its present location. A logistical party, workshop and temporary replacement product are required.
- **Refurbish:** The external appearance does not meet the current requirements. This is resolved by, for example, reupholstering a chair or fitting a desk with a new desk top. This concerns specialist work with additional materials and requires logistics, experts and a temporary replacement product. Remanufacture, in which a product is assembled from several products (several chairs contribute towards assembling a new chair), follows on from this.
- **Repurpose:** To give a product a new purpose or use; this requires insight, knowledge and craftsmanship, in addition to logistics and a workshop.
- **Recycle:** To reassign at material level, mostly removing it from within the organisation. Requires insight, knowledge and craftsmanship, in addition to logistics and a workshop.

It is generally assumed that the biggest savings (financial, staff, material and CO2 emissions) are realised by remaining within the innermost cycles for as long as possible. This can definitely serve as a guideline. However, an exclusive focus on the innermost cycles creates the risk that good alternatives which act completely circular on another cycle are excluded.

SERVICE LIFE & TECHNICAL LIFE

The lifecycle of a furniture item can be broken down into: a service life, a technical life and an economic life.

- **Service life:** the period in which a product is used by a single user or organisation (including repair or refurbishment).
- **Technical life:** the period in which, technically speaking, a product is able to deliver the performance for which it was procured (including repair or refurbishment).
- **Economic life:** the period in which a product is written off.

A product can come to the (provisional) end of its service or technical life for a variety of reasons. This may be due to the product itself, or a changing context. There are roughly four factors that restrict the current state of a product:

1. **Technical service life:** a product is defective.
2. **Design:** the external appearance does not meet the requirements (e.g. changing corporate identity).
3. **Functional performance:** often in combination with changing laws or user requirements (e.g. height adjustable tables or workspaces for disabled persons).
4. **Psychological incentives:** the need for 'something new' (new in the eyes of the user).

In a linear system, the market sometimes actively encourages these factors in order to stimulate disposing of existing furniture and purchasing new furniture. This is less profitable in a circular system, in which products retain their value.

OFFICE FURNITURE AS AN OPPORTUNITY

Office furniture is often referred to in discourses on the circular economy, probably because the first circular economic cases were reported in this segment. Various aspects make office furniture suitable for circular economic business models:



- The chain can be made transparent (no black box as in electronics, where not much knowledge of the content of products is transferred);
- Product designs can be made modular, increasing the potential for reassignment;
- Items are already being maintained and transported;
- The average technical life (approximately 16 years) fits in with the actual innovation cycle (leaving out of consideration market-driven initiatives, such as the New World of Work or changing standards);
- Because of previous developments with, for example, cradle-to-cradle furniture, there already exists a breeding ground for related issues in the segment;
- Office furniture forms part of our everyday environment. To experience that a circular economy can also be realised here and fits in with the organisation-driven values (as in the case of RWS) will increase its acceptance.

DEFINITIONS & CONTEXT

The definition included in the preceding chapter is inspiring, but not sufficiently tailored to the context of this report. In order to be able to provide a greater scope for action, further definitions needed to be developed, the underlying idea being that every action that is not reflected in an attitude or awareness will not result in the necessary transformation. The following definitions were therefore developed with the project team. They provide guidance for questions regarding future elaborations and choices.

	General definition	Regarding office furniture
Circularity	To fulfil temporary needs with permanent cycles, including optimal use of sources that become available in interim periods.	Organise the design and use of office furniture in such a way that products, components and materials can always be reassigned.
Circular economy	A system that guarantees the permanent availability of raw materials in cycles and, as a result, facilitates the relationship between the earth and its human inhabitants, both now and the future.	A system that guarantees the permanent availability of products, components and materials required for office furniture in cycles in such a way that they retain the largest number of applications.
Circular procurement	An instrument for promoting a circular economy.	An instrument that, in view of changing requirements and the developments in office furniture, strives to ensure the permanent availability of products, components and materials required for office furniture and links them to cycles that retain the largest number of applications.

Figure 6: Definitions of a circular economy in general and regarding office furniture in particular.

Starting points	Vision	Principles for office furniture
The earth is a closed system with limited resources – unlimited growth is not possible.	Circular use of materials in order to prevent the loss and scarcity of raw materials.	Thinking in terms of cycles for all office furniture and the products, components and materials required for this furniture. Working as much as possible with what is already in circulation, modular design and production, proper maintenance and insight into reassignment possibilities.
Everything is interrelated.	All the factors are equally important for the stability of a closed system.	All use is of a temporary nature and all the parties in the chain share the responsibility for closing the cycles as much as possible; likely with new rules regarding the use, valuation of materials and services, responsibilities and apportionment of costs and risks.
Nobody knows what the future holds.	Options with a future.	Design, information, use and contracts facilitate the optimal and continuable use of products, components and materials in subsequent cycles, taking account of several environmental effects (stop waste separation or incineration from being labeled as circular, since the latter will rule out applications of materials in the future).
Everything passes, but the consequences are permanent.	Everything is given a temporary purpose.	Decisions that facilitate the short-term demand for office furniture also affect the long-term potential: it is essential to guarantee both the control over the subsequent cycles of products and transfer of internal accountability.

Figuur 7: Principes van circulaire economie in het algemeen en specifiek voor kantoorinrichting.

WHAT DEFINES SOMETHING AS 'CIRCULAR'?

In a circular economy, products have three interacting system components:

- Technical aspects (product);
- Process elements and logistics that support proper action (act);
- Business model of the parties involved used to stimulate the consequences of proper action (awareness).

A user or purchasing organisation plays an active role in the second and third bullets. A supplier cannot fulfil these roles by itself; they are fulfilled in the interaction between supplier and user. The business model includes an agreed assignment of responsibilities for use, maintenance and reassignment (contract).

Circular products do not exist in isolation. The three system elements in Figure 8 show that various actors and processes are needed for a product to circulate. However, the term 'circular' is sometimes used to indicate that a product has certain characteristics to circulate, such as a modular design, made of used materials, etc. These elements are important for a circular economy, but only when secured in operational and financial structures.

A circular product must have a past and a future. This is made possible through transfer of knowledge of the origin of a product (technical) combined with facilities for high-value reassignment (process and data). Several cycles are definitely facilitated and valued (valuation/business model).

A product with the right characteristics has the potential of circulating; however, this potential can only be realised through appropriate use and maintenance (processes) and change of awareness (taking responsibility for all the consequences of our actions, stimulated by the business model). Systems thinking is an important perspective for a circular economy, bearing in mind that parts interact. A single product can therefore not make an action circular; this requires a coherent set of actions.

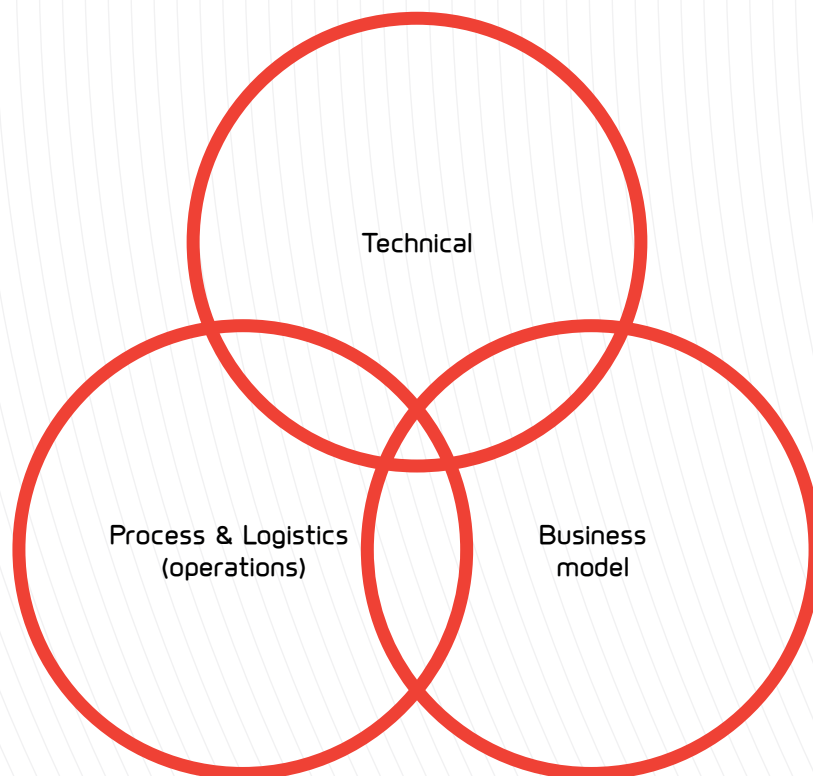


Figure 8: The combination of product, action and awareness in a circular economic proposition.

Source: The foundation was laid down during the Springtij sessions organised by CSR Netherlands in 2015, with input of Copper8.

CURRENT INTERNAL SITUATION

COMPETENCIES & CAPACITY

The current context of Procurement and Category Management is described on the basis of four topics that enable a circular category:

1. People & Roles;
2. Control instruments;
3. Data & Information;
4. Products & Systems.

It turned out to be difficult to find exact information: a lot of the information is fragmented or unknown. The information given below is therefore an initial inventory which can, if necessary, be further examined.

1. PEOPLE & ROLES

The facilities organisations of the Group Service Providers (in Dutch *Concern Dienstverlener*, from now on referred to as CDV) for the Central Government are:

1. Directorate-General for Public Works and Water Management (in Dutch *Rijkswaterstaat* - RWS);
2. The Tax and Customs Administration (in Dutch *Belastingdienst* - BD);
3. Facility Management Haaglanden (in Dutch *FM Haaglanden* - FMH);
4. The Custodial Institutions Agency (in Dutch *Dienst Justitiele Inrichtingen* - DJI);
5. The Ministry of Defence (in Dutch *Defensie* - DEF).

They decide on the services in the area of, amongst other things, facilities products (e.g. office furniture) for the Central Government. The Directorate-General for Government Organisation (in Dutch *Directoraat-generaal Overheidsorganisatie*, from now on referred to as DGOO) determines the policy for equipping offices. The Fact Sheet Physical Working Environment (in Dutch *Fysieke Werkwijzer Rijk*, from now on referred to as FWR) was developed for this purpose. This guide deals with the optimal mix of workspaces and is a tool for equipping offices. The clients of the CDVs determine whether they require office furniture.

The category Office Furniture is the government-wide procurement category for office furniture. The category draws up policy and a vision for the entire life cycle of the delivered products and services. Furthermore, contracts for the procurement of furniture for the various government bodies are concluded with suppliers.

The scope of Office Furniture is the workspace and a workspace-related environment (including meeting places, waiting room furniture, storage furniture and lockers) as well as furniture for the public space, including tailor-made solutions²⁰.

Procurement plays an important role in the process of establishing requirements. However, in practice it is not involved in the preliminary stages until very late, or to a limited extent. The sense of urgency of involving Procurement at an early stage seems to have increased in most organisations over the last few years. The professionalisation of the procurement function, the emergence of Category Management and the increased organisation-wide attention to legitimacy play an important role in this development. The extent to which Procurement is involved in processes differs from one government body to another. Procurement is invited to the initial meetings in some organisations, and further down the line in others.

In practice, terms such as '(circular) procurement' and '(circular) operations' seem to be used interchangeably, as are the various tasks, responsibilities and processes that form part of it. For reasons of clarity in this document, we have therefore used the overview in Figure 9. In this figure, (circular) operations are regarded as the control system that comprises all operational processes. (Circular) procurement is one of these processes, which covers calls for tenders. The traditional procurement processes and forms of tendering are included in this diagram.

²⁰ DGOO, State Catalogue Standard Workspaces and Dynamic Archives, December 2015 version.

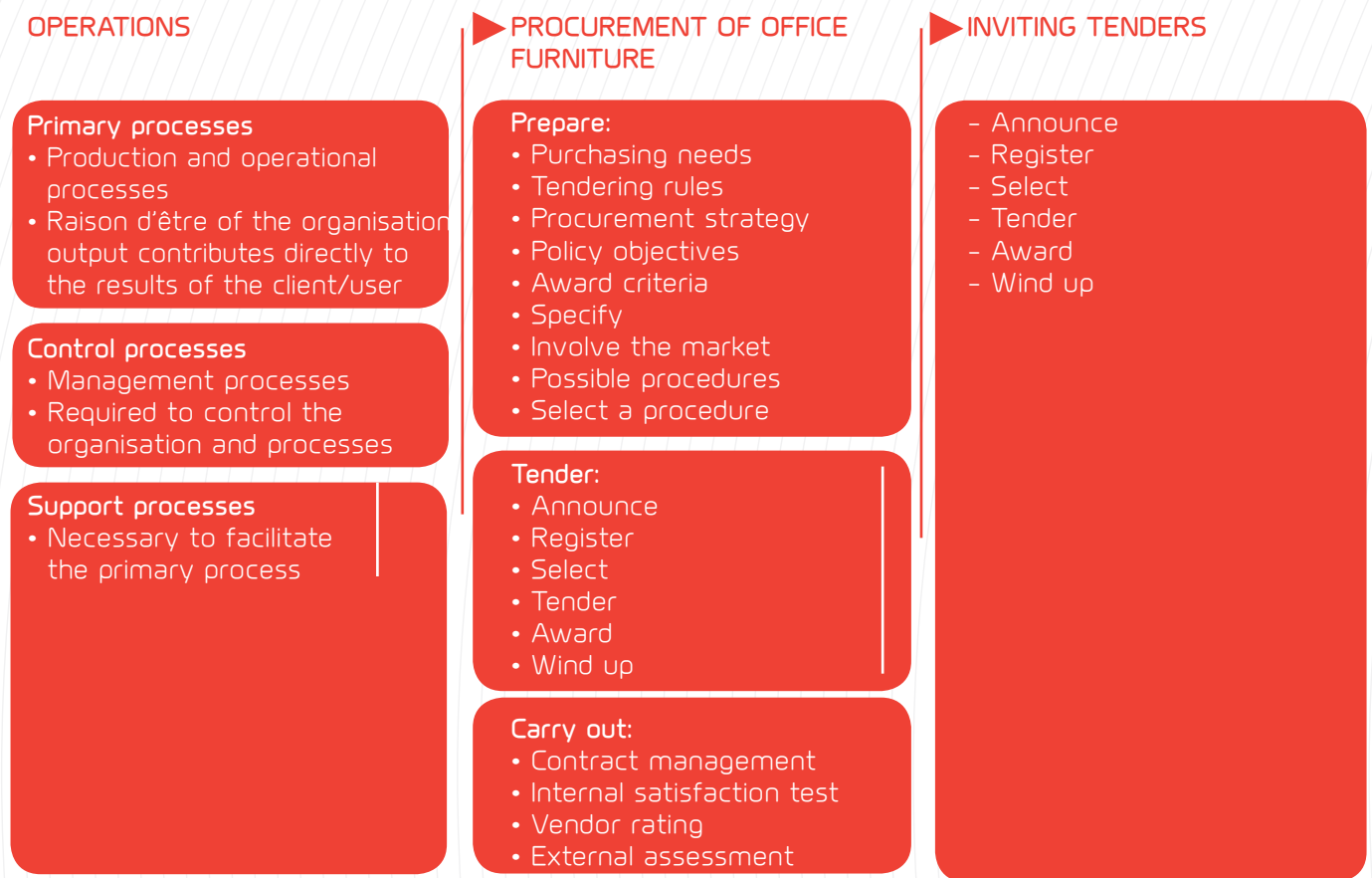


Figure 9: Scope of the following processes: operations, procurement and inviting tenders.
Based on www.pianoo.nl (Procurement and Tenders) and Wikipedia (Operations).

For example, the Central Government Real Estate Agency (in Dutch *Rijksvastgoedbedrijf*, from now on referred to as RVB) and architects are an important link in the procurement of office furniture for new or renovated buildings within the current operational processes of the Central Government. CDVs can only follow category objectives in procurement by seeking active involvement early on in the decision-making process. Circular procurement is therefore only part of the solution. To be able to orient towards a circular category, it is advisable that Procurement becomes more firmly established in other departments and that its position in policy and operations is strengthened. This can help to define the rules and scope for Procurement's operations.

There are several interested parties in the current sphere of influence on office furniture within the Central Government. The following activities and roles have been identified for the category:

- Policy-making: DGOO;
- Defining the outlines: Interdepartmental Committee on Procurement and Tender (in Dutch *Interdepartementale commissie Inkoop en Aanbesteden* - ICIA) and Interdepartmental Committee on Facilities and Housing Committee (in Dutch *Interdepartementale commissie Facilitair en Huisvesting* - ICFH);
- Formulate and implement procurement policy category: Category Management Office Furniture;
- Clients: CDVs;
- End users: all Central Government employees;
- Establishing requirements: Facilities departments and other parties involved;
- Relationship with suppliers: Category Manager, Contract Managers and Procurement Implementation Centre (in Dutch *Inkoop Uitvoerings Centrum* - IUC);
- Sounding board for requirements and procurement strategy: Client Council (in Dutch *Klantenraad*);
- Budget holders: directors of operations;
- Maintenance & small repairs: Externally by means of a framework agreement, managed by Facilities;
- Reassignment: State Movable Property Service via Central Government Marketplace (in Dutch *Domeinen Roerende Zaken* - DRZ via *Rijksmarktplaats*).

STAKEHOLDERS CATEGORY OFFICE FURNITURE

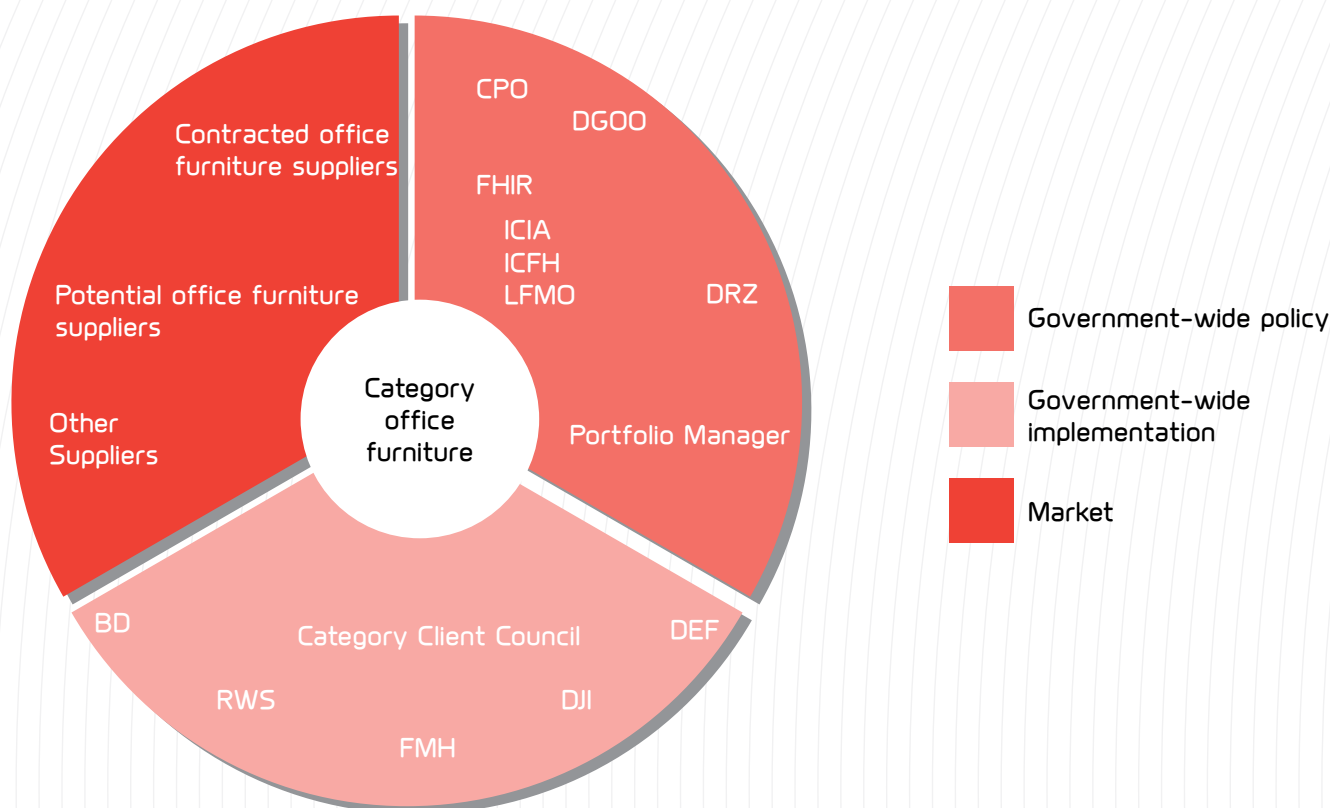


Figure 10: Stakeholders of the category Office Furniture. Source: Category Manager Office Furniture 2016.²¹

2. CONTROL INSTRUMENTS: CULTURE & POLICY

The ministries differ in terms of the position of Procurement as part of the operations and in terms of the requirements. For instance, Procurement Managers at RWS are often involved from the start of the process, and much work is done in multidisciplinary or integrated teams. Moreover, RWS usually does a lot of outsourcing ('The market, unless...'), while other organisations do a lot of things in-house ('Internally, unless...'). The Ministry of Defence is known as the largest buyer of reassigned furniture within the Central Government (over 80% of the furniture offered on Rijkmarktplaats (an online market place for used government office furniture provided free of charge for other governmental use)).

Organisational cultural differences strengthen the diversity of processes within procurement and management processes. This may pose challenges for the implementation of a circular category, but also creates opportunities. Diversity is a basic principle of a circular economy, contributing to resilience.

An overall government-wide solution would not only be practically unattainable, it would also not be able to withstand manifold influences and developments.

Within the organisation of the Central Government, policies that touch on the issues of a circular category are developed in several different ways. Firstly, a rough distinction can be made between substantive ministerial policies (e.g. setting objectives for energy or the environment) and policies for operations (driven by budgets and timeliness).

Secondly, policies are formulated at various levels, across ministries, e.g. in the area of category management or policies regarding architecture. Policies are also formulated within individual ministries, for example with respect to the operations within a ministry. The Category Manager tries to operationalise the policy objectives in the category plan. However, the clients of the category (the CDVs) determine the requirements and manage the budgets themselves.

²¹ Chief Procurement Officer (CPO), Department for Government Facilities, Housing and Procurement Policy (in Dutch *Directie Faciliteiten-, Huisvesting- en Inkoopbeleid Rijk* - FHIR), National Consultation Committee on Facilities Management (in Dutch *Landelijk Facilitair Management Overleg* - LFMO).

With regard to new topics, there is a certain tension between policy and implementation. The category Office Furniture and its clients have often asked for frameworks that have a guiding role in processes and decisions, especially on issues for which objectives have been set at central government level. At the same time, the policy-making process is thorough and long. New issues must have proven their worth in practice before appropriate new policies are formulated, for example by the DGOO.

The development of new policies or objectives within the ministries forms another obstacle regarding circular economy in particular: as a result of spending cuts, non-essential priorities are currently being scrapped in many organisations. An issue that is often perceived to be linked to sustainability, as is typically the case with circular economy, will therefore only receive a lukewarm reception.

The following principles, which are derived from existing policies and fit in with a circular category, apply to the procurement of office furniture. These are accepted agreements on paper whose performance is not always visible in practice.

- Furniture that will become surplus in government departments must be registered for posting on Rijksmarktplaats as soon as possible, and at least 1 year in advance²²;
- Ministries must first consult Rijksmarktplaats for available furniture for each new purchase of office furniture. The rule that applies to all procurement of office furniture is: 'Furniture should be purchased via Rijksmarktplaats, unless...' ²³;
- The CDVs FMH and DJI (amongst others) are already pursuing a three-step policy when they fulfil new requirements: first review what is available in their own area, then consult Rijksmarktplaats and only purchase new items if these sources are inadequate.

3. DATA & INFORMATION: BUDGETS

The maintenance and repair of office furniture is not or scarcely included in current contracts. Additionally, a distinction is made between procurement and maintenance for accounting purposes: purchases of office furniture are regarded as investments, often with a depreciation period, while maintenance and repair work are considered to be operating costs and are recorded periodically. In a circular category such a distinction

would not exist: it merely finances the use or utility of a product. For instance, it should also be possible to use the budget for procurement to extend the service life of existing furniture.

Every ministry has its own budget for purchasing furniture. The category has no budget of its own. Several respondents thought it was unfortunate that the category and Category Manager do not have their own budgets, let alone a budget for developing policies or systems.

4. PRODUCTS & SYSTEMS: STORAGE, LOGISTICS & ASSET MANAGEMENT

The facilities within the Central Government for the maintenance and logistics of office furniture differ from one ministry to another. It seems as if relocations and a certain level of corrective maintenance are generally included in operating costs.

The Central Government does not yet have any systems in place for recording office furniture at a level of detail that makes asset management possible. Respondents indicated that it is not known where furniture is located. In some cases, the location or purchase date can only be ascertained from personal expertise (recognising a specific item) and personal knowledge (remembering when a building was equipped with that specific type of furniture).

The exchange of office furniture within the Central Government is supported by the Rijksmarktplaats website, which is managed by the State Movable Property Service (DRZ). DRZ is responsible for managing the movable property of the Central Government and falls organisationally immediately under the State Secretary for Finance. Rijksmarktplaats was launched in 2012, following a pilot to reassign office furniture within the Central Government via an internal website²⁴.

Furniture can be reassigned to another ministry via Rijksmarktplaats if supply and demand match. The furniture is not stored and no maintenance or repair work is carried out. The office furniture is free of charge; storage, transport and other direct costs are borne by the ministry that acquires the goods.

²² Source: State Movable Property Service.

²³ Fact sheet physical working environment Central Government, January 2015.

²⁴ Source: State Movable Property Service.

In addition to the internal Rijksmarktplaats, there is an external auction house for surplus furniture that is not fit for reuse within the Central Government²⁵. The underlying goals of DRZ for the internal market place and external auction house are to realise savings and contribute to sustainability: 'The 2014 results show a positive picture: savings of almost € 5.5 million were realised. This concerned over 2,500 workspaces (desks and desk chairs) and over 27,000 other items of furniture, including settees, plants and tables²⁶.

However, figures provided by DRZ show that only 12% of all surplus office furniture is actually reassigned. The reason given is that only an estimated 28% of all the office furniture labelled surplus is posted on Rijksmarktplaats, 44% of which is reassigned, since no internal storage capacity is used and only furniture that does not require any repair or maintenance work is reassigned.

STEPS IN THE PROCESS FROM DEMAND TO PURCHASE

There are various framework agreements within the Central Government for the purchase of office equipment. The term is often 4 years, with two 1-year extensions. When a new framework agreement is drawn up,

the requirements are formulated in cooperation with the Facilities departments. The ministries gather information on the expected numbers and functionalities of furniture during the term of the framework agreement. This information is combined with the numbers purchased over the past few years.

Framework agreements are managed by contract managers in the category; the actual purchase of furniture under the contracts is made by the ministries themselves, without the intervention of category management. Various factors can prompt the purchase of furniture: defective products, a change in functional requirements as a result of a change in working methods or functions, relocation in combination with a change in functional requirements, an increase in the number of employees, etc. Figure 12 gives a simplified picture of the process steps between the moment a need arises and the purchase of furniture.

TOTAL NUMBER OF WORKSPACES (FROM 2013 TO 2015)

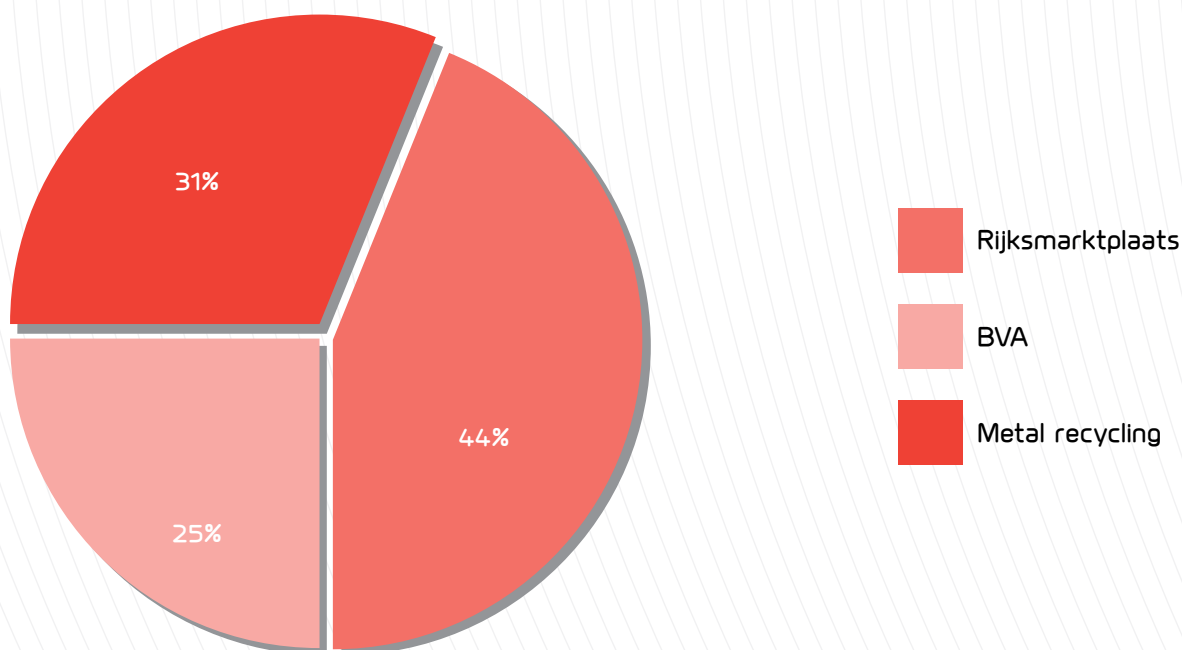


Figure 11: Processing workspaces posted on Rijksmarktplaats into internal reassignment (44%), external sales (25%) or disposal (31%). Source: DRZ²⁷

²⁵ Source: State Movable Property Service.

²⁶ Ministry of the Interior and Kingdom Relations (May 2015). 2014 Annual Report of the State's Conduct of Internal Management, p. 38. The following website was consulted: <https://www.rijksoverheid.nl/documenten/rapporten/2015/05/01/jaarrapportage-bedrijfsvoering-rijk-2014> (February 2016).

²⁷ BVA Auctions (BVA) auction furniture at public auctions on behalf of the Dutch government (DRZ).

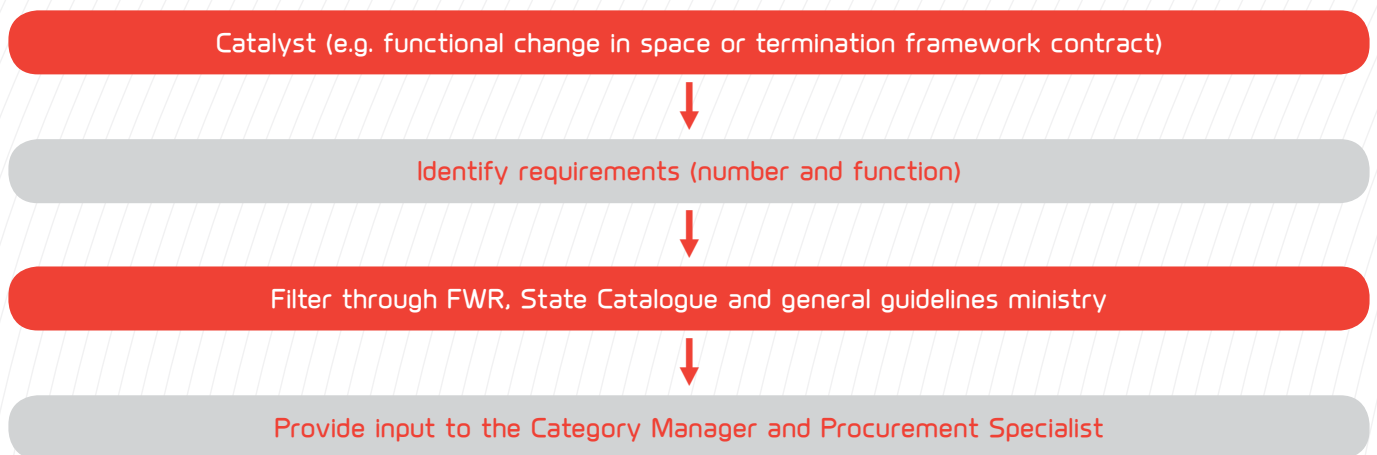


Figure 12: Process from demand to the purchase of office furniture within RWS.

The general policy is that the list of surplus furniture that is made available on Rijksmarktplaats should be consulted first, once it has been established that there is a need for furniture. If no or no appropriate furniture is available, individual items of furniture can be purchased under the existing contracts. In case of a relocation to a new building, the services of an

architect are usually engaged for the interior design of the building or department, in which the starting point is to make use of the existing contracts for the design of the architect. Practice shows that this does not always happen and that the purchase of furniture is sometimes also recorded into other accounts.

MARKET ANALYSIS & LEARNING FROM EXAMPLES



DISRUPTIVE INNOVATION

The transition from a linear to a circular economy is a disruption that demands a shift in the roles of all parties and, therefore, new capabilities. This subject is currently still being developed and the first signs of adaptation can be seen in the market. However, the established market operators in office furniture still do not have any standardised processes or integrated cases in place. Pilots and new avenues are currently being experimented in various parts of a circular economy, in the areas of new business models, design, materials and in terms of facilitating various cycles.

The speed with which the market has embraced the concept of a circular economy is a positive thing. However, practice shows that the inclusion of the term in the marketing communications of suppliers does not offer any guarantees for its actual implementation ('greenwashing' definitely constitutes a risk here); it sometimes concerns only a very limited range of products, while the impression is created that the company's operations are already completely circular. Solid and substantiated contracting with transparent agreements is an important requirement for setting a real transition in motion.

The demand for circular propositions by clients (users) is an important incentive for market operators to make the transition to a circular model, since demand creates supply and vice versa. Due to its scale, position and social responsibility, the Central Government is able to give a positive and particularly strong impulse to this disruptive development as a client.

IN PRACTICE

This chapter looks at what can already be done and what can be learned from this for the strategy and implementation of a circular category in three different ways:

1. The competences required for a circular category and the maturity of the market in this;
2. Generally accepted business models or contracts that make circular economic initiatives possible;
3. Reference cases and the lessons that can be drawn from them.

To realise a circular model takes more than just the manufacture or purchase of a product. It takes skills that do not necessarily fall under the core activities of suppliers and users to facilitate the various cycles, such as:

- Maintain, redistribute, repair, refurbish, repurpose and recycle (the cycles set out in Chapter 2);
- Logistics and storage;
- Data management;
- Financing (investments, on/off balance sheet, instalment amounts).

COMPETENCES FOR A CIRCULAR CATEGORY

The capacity required for a circular category can now partly be delivered by regular suppliers of office furniture. A basic assumption of the transition to a circular economy is that new business models motivate suppliers intrinsically to take responsibility for several life cycles of a product. This results in products that are designed for several cycles and the processes that support this.

Because of the popularity of cradle-to-cradle furniture, the Dutch office furniture market is more or less ready to submit circular propositions at product level (technical). What is often still lacking are the corresponding processes to facilitate several cycles, the business model and the value proposition between the supplier and user.

In some cases, suppliers of office furniture have indicated that their operations are already completely circular. Unfortunately, this is often not really the case, for a number of different reasons:

- The perception that only product characteristics or a lease offer can be equated with an integrated circular model;
- The capacity to close the cycles by means of various cycles is not (yet) available. Production facilities usually focus on the production of new articles, not on repairing, repurposing or upgrading existing products;
- Unfamiliarity with the valuation of products after certain service lifecycles creates reluctance to make agreements regarding residual values, take-back guarantees, guarantees for use in a successive service life cycle, etc.

Some parties have already acquired (a number of) the necessary skills, often in the least expected areas. Office furniture rental companies, for whom the longest possible use of assets by logistics, repair and refurbishment has become part of the daily routine, serve as an example. In this case the business model favours the thorough testing of products for the length of service life, the possibility for repair and refurbishment and value development before purchase.

Office furniture removers, which are also specialised in storage and asset management for their clients, serve as another example. These companies have logistics, maintenance and data management of office furniture as their core task. Moreover, their business model is based on services which appear to be easily expandable with extra capacity required for a circular proposition. Investment in the development of new capacity is regarded as an important contribution and looked upon with interest, provided that there is sufficient scale or that scales can be combined, as in the case of the Central Government.

It is to be expected that various companies enter into joint ventures in order to jointly develop propositions which really close the cycles. Because parties other than the known parties can optimally fulfil a requirement, it was decided to arrange Figure 13 according to the necessary capacity and the type of company that could deliver this capacity. This is a first impression and a snapshot in time; market developments will bring about changes.

The Belgian company PMC Holding is an example of business development and how supply is driven by demand. Originally starting as an office furniture remover, it began to develop an increasingly wider range of services in response to market demand. They created a branch that facilitated the logistics of large interior design projects at the request of suppliers. Storage and internal logistics have been further expanded at the request of clients. Their most recent daughter is NNOF (Nearly New Office Furniture), which responds to the need to repurpose (to give a new purpose or use to) written-off furniture as new office furniture.

The table gives an initial overview of the capabilities required for a circular category and the market operators that deliver this capacity, based on online investigation and previous experience. This concerns a snapshot in time; the market is developing quickly and

parties adapt their capacity when there is a demand for circular propositions. This table shows only the core activities of each party, not the activities they would procure from other parties, such as maintenance.

	Office furniture suppliers	Office furniture rental companies	Facilities service providers	Removers	Financial service providers	New style companies (e.g. NNOF)	Waste processing companies	Central government
Production	●							
Subsequent delivery of parts	●	●						
Sales	●	●	●					●
General maintenance		●	●					
Specialist maintenance		●	●					
Inspection		●	●					●
Repair	●	●	●			●		
Refurbish		●				●		
Reuse	●	●						
Repurpose						●		
Recycle						●	●	
Chipping & Tracking	●			●				
Data management				●				●
Logistics	●	●		●		●		
Storage		●		●				●
(Dis)assembly		●		●		●		
Collection		●				●	●	
Financing	●	●			●			●

Figure 13: Initial scan of the available capacity for a circular category.

BUSINESS MODELS & CONTRACT TEMPLATES

In propositions for a circular economy, a shift can be discerned in the underlying business model, from product to service. This PSS (Product Service System) trend shows a variety of product-service combinations, since the product only forms one part of the entire proposition.

In a circular model, a product-service system is geared towards facilitating several cycles, the assumption being that the proposition includes new partnerships, also with the user. The Belgian Plan C has made an overview of PSS variations, which is included in Figure 14.

With respect to office furniture, the following comparison can be made:

- Pure product = furniture
- Product-oriented = furniture + maintenance
- Use-oriented = furniture + maintenance + financing
- Result-oriented = everything is outsourced with a Service Level Agreement
- Pure service = a subscription for flexible workspaces

It is important to point out here that a circular proposition is not the same as a service proposition, even though it is a common form. A service proposition can certainly be a form of a circular proposition, but does not need to be. The move away from ownership is also quite usual, resulting in 'from ownership to use' propositions. This is a frequently used means to give manufacturers a clear incentive for responsible product design, product handling and high-value use. However, the move away from ownership and service propositions are mere means towards circular propositions, not the objective itself.

The two most commonly used circular economic contracts at this point are the buy/buy-back model and pay-per-use model. An analysis which the Kirkman Company carried out for UMC Utrecht shows that both models are more economical than a standard linear contract, in which pay-per-use appears to be more economical for a 5-year contract period and a buy/buy-back contract offers the best results for a 10-year contract period.²⁸

Product service systems: Main and sub-categories

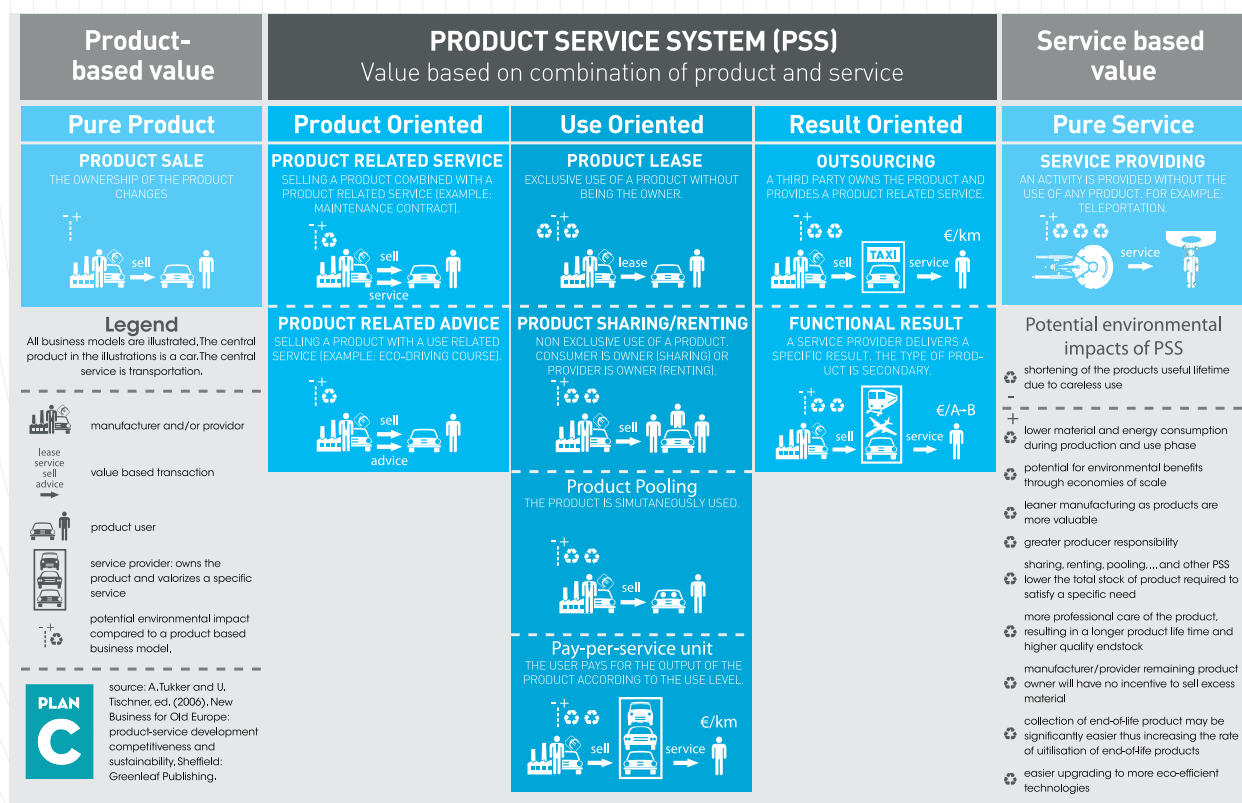


Figure 14: An overview of Product Service Systems made by Plan C. Source: A. Tukker en U. Tischner e.d. (2006).

²⁸ Analysis of the report by Dijkstra, R., Pijnenborg, A. (2015). *Circular procurement of furniture... worth looking into!* The Kirkman Company report was commissioned by UMC Utrecht. Analysis Turntoo

LEARNING FROM PREVIOUS EXAMPLES

The implementation of circular models has been experimented with over the past few years by means of pilot projects; new approaches to call for tenders, selection process, business models and contracts were investigated. A number of these cases were examined for this report. The main learning points on three relevant issues are summarised: Commissioning Practice, Process and Request & Selection. The cases are:

- Office furniture for the Duurzaamheidsfabriek (a centre which brings together innovation, sustainability, education, and business) in Dordrecht
- Town Hall in Brummen
- Liander head office in Duiven
- Office equipment Liander Duiven
- Work wear for the Ministry of Defence
- Coffee corner furniture Ministry of Infrastructure and the Environment
- Lighting at Amsterdam Airport Schiphol
- Office furniture ProRail signal station

Commissioning practice

In this stage, in which many market operators are looking for suitable models and differ in terms of level of knowledge and experience, it is important that:

- the vision and goals of the client are clearly defined;
- the operational team has the knowledge required to control the market;
- the call for tenders regards a significant size, in order to make developments investments worthwhile for suppliers.

Process

The process is often not set up traditionally and calls for:

- sufficient time in the initial stages of the process, in order to adequately compose the call for tenders and allow room for dialogue with the market;
- responsible commissioners, actively engaging in decision making, making sure necessary choices match the needs or respond to new developments;
- enable suppliers to translate goals in the chain and be open to operating conditions (if any) or suggestions for design alterations resulting therefrom.

Call for tenders & selection

Specifying requirements to detailed technical or design specifications limits possible suitable offers, therefore:

- functional specifications enable suppliers to come up with new solutions;

- circularity criteria should be included prior to architect's design;
- invite 'unusual suspects' who show adequate capabilities but are not (yet) active in this market.

An example of an 'unusual suspect' is the invitation to a builder of roller coasters for the steel roof structure of the Liander head office. A builder of roller coasters has the skills to build a safe and light-weight detachable construction, whereas a traditional steel builder is incentivised to use as much steel as possible. An example of mutual interests is the recently delivered Circular Lighting for Amsterdam Schiphol Airport by Philips and Cofely. Philips supplies the installation and Cofely maintains the installation. Because it is a joint venture, it is also in the interest of Philips to keep the maintenance costs as low as possible. The product design was revised for this purpose.

Two much-discussed circular office furniture pilots are the new signal station for ProRail in Utrecht (with Ahrend) and the Liander head office in Duiven (with Gispen). However, both pilots can only be called 'circular' to a limited extent (although existing furniture was reassigned in the ProRail pilot). However, 'during the pilot the furniture supplier was not very enthusiastic about taking back furniture'. ProRail bought the furniture anyway; despite several meetings with furniture suppliers, the parties were not able to conclude a pay-per-service agreement. In time, ProRail will examine how the reuse of furniture can be as high-value as possible following initial use²⁹. In this specific case two, more commonly seen, process details hindered successful outcomes: furniture specifications were drawn up at an early stage, taking no account of circularity requirements, and time constraints imposed for completion of the building.

In the initial call for tenders for office furniture for the new Alliander head office, the organisational objectives with respect to reuse and circularity were overlooked. Initially, a traditional process was decided on, in which desired appearances and brands were specified in the architect's design included in the call for tenders. After such a linear call for tenders it is hardly possible to submit a circular proposition. However, with great resourcefulness, the procurement team then made a determined effort to include circularity. An important lesson learned here is to firmly establish policy and targets on all organisational levels, in addition to functional tender and awarding.

²⁹ Padding, T., Versteeg, G. (2015). REBus - Circular procurement of office furniture pilot ProRail. The following website was consulted: <https://www.pianoo.nl/document/11111/pilot-circular-inkopen-kantoorinrichting-prorail-2013-2015> (January 2016).

POTENTIAL FOR THE CATEGORY

SUMMARY

The potential of circular operations for the category Office Furniture lies in the scale and the role of the Central Government itself. The Central Government has both market power and serves as an example in the industry. With a purchasing volume for office furniture of approximately € 40 million per year and its role as a standard-setting body, 'the government, as a major consumer, can play an important role in the transition to a circular economy.'³⁰ Creating benefits at various levels:

1. Sustainability & Political Relevance
 - The contribution to the government's sustainability policy and the objective of a circular economy in the Netherlands, as set out in the 2012 coalition agreement.
2. Social potential
 - Creating jobs.
 - Fulfilment of an exemplary role in a socially very important transition.
3. Economic potential
 - Government-wide savings of € 8-11 million per year through maintenance and the reassignment of existing furniture, amongst other things.
4. Improved operations
 - Help achieve internal objectives, such as increased flexibility for expansion and contraction, through internal asset management.

1. POLITICAL & SOCIAL DIMENSION

Sustainability

The circularity criteria set out in Chapter 2 are not only important conditions for closing cycles, they also form the basis for a sustainable economy: less extraction of raw materials, fewer CO₂ emissions and a healthier environment. For instance, a study specifically carried out by McKinsey on office furniture showed that the volume of consumption of raw materials during a service life extension of factor 4 was reduced by 75%.³¹

Life cycle extensions help reduce CO₂ emissions. Avoidance of both the extraction of raw materials and additional production processes prevents unnecessary energy consumption. A study by Duurzaam Bedrijfsleven

(a major source of information on sustainable business practice, innovation and Cleantech for the Dutch corporate sector) shows that the mere facilitation of a second life for a carpet tile results in a 20% reduction in CO₂ emissions³². According to figures provided by NNOF, repurposing office furniture can help reduce CO₂ emissions by 50-80% on average when compared with new purchases, in which 100 workspaces amount to a reduction in CO₂ equivalent to 6-10 tonnes.³³ A study by the Club of Rome also points out the positive effect of the circular economy on the reduction of CO₂ emissions.³⁴

Another important point is that the use of non-toxic materials is an essential criterion for circular products. The effect on the health of users and the reduced environmental impact is predictable.

Employment

In addition to the exemplary function to and stimulation of the market, the option for a circular category also has effects on another socially relevant issue: the creation of local jobs. TNO estimated a potential of 54,000 additional jobs in the Netherlands as a result of the transition to a circular economy. Reports on the Swedish and British economies revealed similar numbers. A recent study by the Club of Rome even estimated a potential of 100,000-200,000 additional workspaces.³⁵

These numbers apply to the national economy. Upon examination of specific sectors, it must be acknowledged that the creation of new jobs as a result of this transition tends to involve job losses in the old model. The actual number of additional jobs created by a circular office furniture market has not been quantified at this point. However, it is clear that the activities that are required to close the cycles (maintain, redistribute, repair, repurpose) are labour-intensive and definitely lead to additional local jobs.

³⁰ Motion tabled by the MPs Cegerek and Van Veldhoven, (October 2015). The following website was consulted: <https://www.parlementairemonitor.nl/9353000/1/j9vvij5epmj1ey0/vjylcaobs2z7> (February 2016).

³¹ Study by McKinsey (internal document).

³² A study by Duurzaam Bedrijfsleven in cooperation with Desso and Turntoo (internal document).

³³ <http://www.ikinnoveer.be/nnof> and <https://www.youtube.com/watch?v=Ab5moghxxUs>, confirmed by NNOF.

³⁴ Wijkman, A., Skånberg, K., (2015). *The Circular Economy and Benefits for Society*. The following website was consulted: <http://www.clubofrome.org/a-new-club-of-rome-study-on-the-circular-economy-and-benefits-for-society/#more-1300> (April 2016).

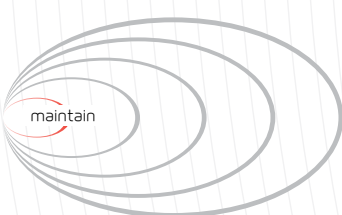
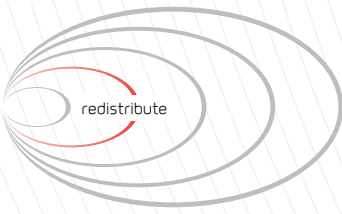
³⁵ TNO (2013). *Opportunities for the Circular Economy in the Netherlands*. Commissioned by the Ministry of Infrastructure and the Environment; Wijkman, A., Skånberg, K. (2015). *The Circular Economy and Benefits for Society*. The following website was consulted: <http://www.clubofrome.org/a-new-club-of-rome-study-on-the-circular-economy-and-benefits-for-society/#more-1300> (April 2016). *The Circular Economy and Benefits for Society*. Morgan, J., Mitchell, P. (2015). *Employment and the circular economy, Job creation in a more resource efficient Britain*. The following website was consulted: <http://www.wrap.org.uk/content/employment-and-circular-economy> (April 2016).

2. ECONOMIC POTENTIAL

Circular models require scale in order to make the initial additional costs of setting up, for example, logistics, data management and workforce cost-effective. The ideal size of an assignment is situation-specific and depends on the necessary adjustments in the processes and services between a supplier and a user. A certain scale is important for the Central Government, as both user and client. As a user, the initial investments when setting up internal processes become more viable as results are bigger. As a client, the size of an assignment is a driving factor in helping the market jump the initial transition hurdles to develop services and products for a circular category.

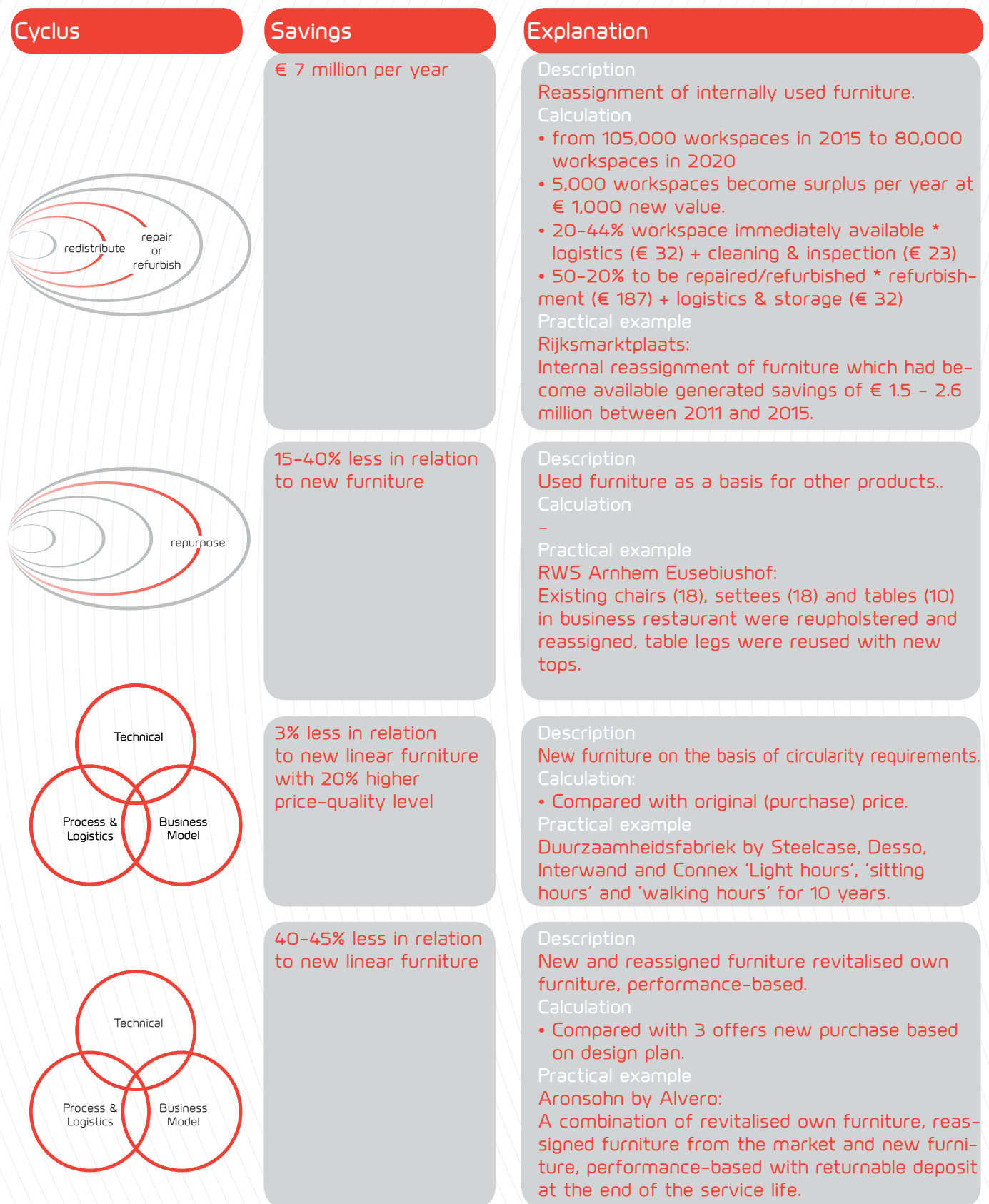
In 2015 there were approximately 105,000³⁶ workspaces for 109,487 FTEs (Full-time equivalent) within the Central Government.³⁷ This significant number makes it commercially interesting and feasible to set up management and maintenance systems or to develop new products. This applies to both the current as-

sets and furniture to be newly purchased. In order to calculate the economic potential of a circular category Office Furniture, an analysis was made of the various cycles for office furniture. These are shown in Figure 15.

Cycle	Savings	Explanation
	<p>€ 1.3 – 4 million per year</p>	<p>Description Extending the service and technical life of existing furniture.</p> <p>Calculation</p> <ul style="list-style-type: none"> • 80 workspaces, 10 new workspaces per year • € 1,000 purchase + € 23 per year maintenance workspace • Extension service life from 8 to 16 years = savings of € 1.3 – 4 million per year • Range as a result of reupholstering or not and maintenance every 1 or 2 years. <p>Practical example Architectural firm in Haarlem: During a relocation to a new building, 1,200 desk and conference chairs were inspected for their mechanical condition and were deep cleaned on site. A guaranteed additional service life of at least 4 years. Costs € 26 per chair vs. € 500-600 (purchase price).</p>
	<p>60-65% less in relation to new</p>	<p>Description Reassignment of externally used furniture.</p> <p>Calculation –</p> <p>Practical example Health insurance company in the Central Netherlands: Purchased 200 used workspaces, 60% less expensive when compared with the original (purchase) price.</p>

³⁶ See Appendix 1 for additional information and calculation.

³⁷ Ministry of the Interior and Kingdom Relations, Directorate-General for Governance and Kingdom Relations, Public Service Labour Affairs Department (September 2015). *Working in the Public Sector 2015, Trends and Figures*. The following website was consulted: <https://www.rijksoverheid.nl/documenten/rapporten/2015/09/25/werken-in-de-publieke-sector-2015-trends> (February 2016); Ministry of the Interior and Kingdom Relations (May 2015). *2014 Annual Report of the State's Conduct of Internal Management*. The following website was consulted: <https://www.rijksoverheid.nl/documenten/rapporten/2015/05/01/jaarrapportage-bedrijfsvoering-rijk-2014> (February 2016), p. 52. - A workspace standard of 0.9 has been set for the period from 2020, with the aim to reduce this to 0.7.



Explanatory notes: The figures apply to the entire government and all calculations were made with average amounts (average service life, purchase price workspace, maintenance costs per workspace, number of workspaces over the next 10 years, number of surplus workspaces per year)

Figure 15: The potential savings of a circular category (government-wide), broken down into various cycles.

3. CONTRIBUTION TO INTERNAL POLICY AND OPERATIONAL OBJECTIVES

Based on information on the number of civil servants in 2014, the objectives of the Central Government for scaling down the civil service until 2020 and information on revising the workspace/FTE standard, it is estimated that the number of workspaces within the Central Government will decrease by approximately 5,000 per year in the years ahead as a result of:

- a reduction in the number of government offices from 111 in 2014 to 70 in 2020³⁸.
- a reduction in the number of civil servants from 116,000 to 100,000³⁹.
- a reduction of the workspace/FTE standard to 0.9 or 0.7⁴⁰.

In principle, some of the surplus furniture can be reassigned elsewhere within the Central Government. Increasing the occupancy rate is also a way to make smarter use of assets. With the Central Government's high-quality furniture, this will not affect the technical service life of a product.

There is no reliable information on the average service life of office furniture within the Central Government at this point. Moreover, the ministries have different views on what a service, technical or economic life is. While the replacement of office furniture is determined by its economic service life at the Ministry of Economic Affairs, the Tax and Customs Administration uses the cash accounting system: furniture is not replaced until it has come to the end of its technical life. Based on a preliminary survey, the service life appears to be an average of eight years (the service life of a chair is usually half of this).

Market operators indicated that extending the service life of existing furniture through preventive maintenance by 16 to 21 years is very realistic, especially since government suppliers have for the most part delivered high-quality products during the past few years. The psychological aspect that clients of the category 'have a need for something new' or have a negative view of reassigned furniture was also factored into the calculations. That explains why, for example, the reupholstery of a desk chair was included in the calculation for reassignment or scheduled maintenance (the costs of which can be decreased by increasing the level of support or becoming familiar with the quality).

Circular operations are not only an interesting model for the category Office Furniture from an economic point of view; several objectives of the Central Government Organisation are fulfilled during implementation. Objectives and Key Performance Indicators (KPIs) differ from one ministry and implementation level to another, in which the Central Government's policy structure results in an accumulation of different objectives, frameworks and KPIs. For the purposes of this report, it was decided to examine the effects on the objectives set by the category management and client council as well as a series of five KPIs which apply to all purchasing organisations

Objectives of the Category Office Furniture

1. Promoting efficiency

- A circular category benefits from the standardisation of products and systems since too much diversity decreases the potential to internally circulate assets. This standardisation will also help to expedite internal processes.
- Managing and extending the service life of office furniture creates opportunities for responding more quickly to organisational changes: 'The circular economy, which is the efficient use of resources through more extensive maintenance, recycling and refurbishment, is a natural promoter of cost and time savings, with its emphasis on maximising the lifecycle of assets.'⁴¹

2. Promoting flexibility

- Consciously working towards exchange of furniture between departments reduces time and costs when responding to readjustments of staffing levels. It makes it possible to use current assets more quickly.
- Modularly designed products make it possible to make modifications and reduce the financial risk of changing work processes.
- Most circular models place (some of) the responsibility with the supplier, giving him or her an incentive to deliver a good performance and fulfil the requirements of a client.

38 Ministry of the Interior and Kingdom Relations (May 2015). 2014 Annual Report of the State's Conduct of Internal Management, p. 7. The following website was consulted: <https://www.rijksoverheid.nl/documenten/rapporten/2015/05/01/jaarrapportage-bedrijfsvoering-rijk-2014>.

39 Ministry of the Interior and Kingdom Relations (August 2014). Labour Market Analysis Central Government; looking ahead to 2016 and 2020. The following website was consulted: <http://kennisopenbaarbestuur.nl/rapporten-publicaties/arbeidsmarktanalyse-rijk-een-voortuitblik-naar-2016-en-2020/>.

40 Ministry of the Interior and Kingdom Relations (May 2015). 2014 Annual Report of the State's Conduct of Internal Management, p. 52. The following website was consulted: <https://www.rijksoverheid.nl/documenten/rapporten/2015/05/01/jaarrapportage-bedrijfsvoering-rijk-2014>.

41 The circular economy: a natural driver for cost efficiency for all. The following website was consulted: <https://www.3stepit.com/uk/asset-management-2/the-circular-economy-a-natural-driver-of-cost-efficiency-for-all/> (April 2016).

3. Stimulating innovative power

- A circular category requires closer cooperation between various departments, such as Purchasing, In-house Facilities, Finance and Contract Management. Policies and operations will therefore have to be aligned even better. Such an integral approach often has a stimulating and innovative effect.
- Communication on the new vision on interior design and circular thinking could be an incentive to employees to apply this new way of thinking to their own area of activity, since it affects everyone's environment.

4. Promoting sustainability

- This is worked out in the beginning of this chapter.

5. Promoting a good image

- The circular economy is currently receiving a great deal of attention from the media, corporate sector and government. By taking a leading role in this area, the category Office Furniture is setting an example for sustainable circular operations.
- To promote the easy exchange of furniture assets, a certain uniformity in colour schemes is desirable. At the same time, this creates better recognition or corporate identity within the Central Government.

GOALS: MAIN OBJECTIVES & SUB- OBJECTIVES

AMBITION

Category Management aims to make the category Office Furniture circular. This means that operational processes are organised in such a way that the preservation and value of materials in a circular category are guaranteed by:

1. Fulfilling requirements as much as possible with existing furniture (if the requirements remain the same);
2. When fulfilling new requirements, use material that is already in circulation, both inside and outside the organisation;
3. Assessing new products for strict circularity requirements (product, process and valuation);
4. Making optimal use of products, components and materials in subsequent cycles in order to close the loops, taking account of multiple environmental effects.

OBJECTIVE

A circular category by the end of 2020, realised by means of the following:

1. Activities and measures that extend the service and technical life;
2. Internal circulation of assets and acceptance of reassigned furniture;
3. A procurement strategy and contracts that support a continuous development process for circular products and services with the market, including reassessment moments;
4. Chain transparency of suppliers over subsequent cycles and accountability

SUB-OBJECTIVES AS MEASURING TOOLS

In order to work towards the main objective in stages, with interim milestones, the following indicators were defined to measure progress. 1, 2 and 4 extend beyond the category; the intended results can only be achieved in cooperation with Facility Departments:

1. Extend by 100% the service life (in years) of all types of furniture, both existing furniture and furniture to be newly purchased;
2. Realise savings of at least 25% on procurement budgets for new furniture in relation to the 2015

budget by reassigning existing furniture;

3. Contract Management

- a. new framework agreements:
 - The highest possible percentage of reassigned furniture as part of the procurement mix;
 - The highest possible percentage of the procurement mix satisfies the circularity criteria regarding product, process and valuation;
 - In which the combination of reassigning existing furniture and new circular furniture must equate 100% as far as possible.
- b. existing framework agreements:
 - Conclude supplementary framework agreements for all services other than the supply of furniture which extend the service life of existing furniture;
 - Increase the percentage of furniture that has become available for reassignment in new applications;
 - Develop activities for reassigning furniture that users perceive to be 'new'.
4. a. short-term: No surplus furniture being sent to a waste incinerator or rubbish dump.
- b. long-term: a pool of parties that are transparent and capable of high-value reassignment of office furniture.

CONDITIONS

At every step taken by the category Office Furniture, activities must contribute to:

- a. The multifunctional use of spaces with a variety of workspaces and meeting places suitable for the work of the user;
- b. Promote efficiency, flexibility, innovative power, sustainability and a good image of the Central Government.

All of these at equal or lower costs and of equal or better quality/comfort as or than new purchases.

STRATEGY FOR A CIRCULAR CATEGORY

BUILDING A CIRCULAR SYSTEM

The goal to make the category Office Furniture circular has four starting points:

1. Fulfilling requirements as much as possible with existing furniture (if the requirements remain the same);
2. When fulfilling new requirements, use material that is already in circulation, both inside and outside the organisation;
3. Assessing new products for strict circularity requirements (product, process and valuation);
4. Making optimal use of products, components and materials in subsequent cycles in order to close the loops, taking account of multiple environmental effects.

A growth model with several stages was selected as a strategy for a circular category. In this model, the low-hanging fruit is picked in the short term using current assets by taking advantage of the shrinking government, amongst other things. By picking the low-hanging fruit, processes come into being that make it possible to use furniture for a longer period of time. The investment of time and resources in developing new structures within the Central Government lays the foundation for a circular category in the long term and gives market operators enough time to develop the necessary new products and services. In this way, the category will develop:

FROM CIRCULAR OPERATIONS WITH LINEAR PRODUCTS TO CIRCULAR OPERATIONS WITH CIRCULAR PRODUCTS

This strategy has three benefits:

1. The value of the current assets is used to maximum capacity;
2. It enables the development of maintenance and management processes for products and the accumulation of knowledge of new procurement processes and contracts;
3. The market supply of circular propositions can gradually develop alongside the demand for new furniture assets.

The goal is to build a system that guarantees that products, components and materials will remain usable for as long as possible. Figure 16 shows the phase model, in which the short-term developments are divided into two activities (Stage 1 and Stage 2). The processes and knowledge that are built up in the first two stages, both within the Central Government and in the market, support the development of the third stage. The term 'stage' does not mean that the activities alternate. The three stages run parallel, but the emphasis gradually shifts from Stages 1 and 2 to Stage 3.

CIRCULAR OPERATIONS WITH LINEAR PRODUCTS

Taking advantage of the shrinking government

2016 - 2020

Extending the service life of existing furniture

2016 - 2024

CIRCULAR OPERATIONS WITH CIRCULAR PRODUCTS

Building up the circular category

2016 - 20XX

Figure 16: Developing into a circular category in 3 stages.

Stage 1: Taking advantage of a shrinking government (2016–2020)

A surplus of office furniture will arise in this period as a result of the decrease in the number of workspaces within the Central Government. Additionally, as a result of trends such as digitalisation and the New World of Work, certain types of furniture will become surplus. Using furniture that becomes available will create the greatest (economic) potential in this stage and contribute directly to sub-objective 2 (discussed in Chapter 6): ‘Realise savings of at least 25% on the procurement budgets for new furniture in relation to the 2015 budget by reassigning existing furniture’.

The processes to be developed and the services to be procured will support the cycles:

- Redistribute (immediate reassignment);
- Repair & Refurbishment;
- Repurpose.

In order to be able to take advantage of the shrinking government as much as possible, activities that treat the surplus furniture as valuable assets for the government organisations are required. In addition to the existing framework agreements, services such as the following are needed:

- Listing and keeping track of furniture that is and will become available;
- Checking the status and actions required for reassignment;
- Thorough cleaning, minor and major maintenance;
- Parts replacement;
- Storage, transport, (dis)assembly.

Stage 2: Extending the service and technical life of existing products (2016–2024)

In this period, activities and measures that extend the service and technical life will be developed so that current assets can be used for as long as possible. This will limit the demand for furniture that is to be newly purchased and increase the supply of reassignable furniture. The objective is to extend the service life (in years) of all types of furniture, both existing furniture and furniture to be newly purchased, by 100%. Currently, furniture seems to have an average service life of 8 years. This will be increased to an average of 16 years.

The processes to be developed and the services to be purchased will support the cycles:

- Maintain;
- Repair & Refurbishment

This also requires services to supplement existing framework agreements; preventive maintenance,

influence the attitude of users in favour of service life extension, technical possibilities for technical life extensions, logistics and storage. The new vision and goals are incorporated in new framework agreements, in addition to performance agreements regarding service and technical service life.

Stage 3: Building up a circular supply (2016–20XX)

The procurement of new or reassigned furniture on the market according to increasingly strict circularity requirements for product, process and valuation creates a build-up of circular assets. This is made possible by a procurement strategy and contract templates which together with the market support a continuous development process for circular products and services, including moments for reassessment.

All the cycles play a role in this. The following objectives have been set when purchasing new furniture:

1. Office furniture that satisfies strict circularity requirements, with agreements regarding maintenance, repair, modification and take-back which guarantee that furniture can remain in circulation for as long as possible.
2. A supply of exchangeable furniture which can circulate freely within the organisation, in the years ahead there will be an increase in the choice of circular furniture and the technical know-how for design and production.

New framework agreements include circularity and performance criteria in a growth model:

- The highest possible percentage of reassigned furniture as part of the procurement mix (reassigned assets of the Central Government or reassigned furniture from the market which satisfies the technical requirements, such as modularity; the possibility to repair and replace parts; storage facilities and basic inbound and outbound logistics; free from harmful substances);
- The highest possible percentage of the procurement mix satisfies the circularity criteria as regards product, process and valuation;
- In which the combination of reassigned existing furniture and new circular furniture must equate 100% as far as possible.

If there is a demand for furniture which does not satisfy the circularity criteria, this demand will always be met with reassigned furniture from the market, i.e. extending the service life by making use of existing stock in the market.

Work will also be carried out on agreements and suitable channels for the disposal of surplus furniture or components destined for high-value reassignment in several subsequent cycles:

- Short-term: No surplus furniture being sent to a waste incinerator or rubbish dump.
- Long-term: Pool of parties which are transparent and capable of high-value reassignment of office furniture. High-value reassignment arises by facilitating several cycles for the highest utility and value of products, components and materials, the starting point being that furniture is reassigned locally, preferably as much as possible in its original form, unless the supplier comes up with a respectable alternative.

The initial steps of Stage 3 will be taken at the start of Stages 1 and 2, not after completion. This lead-in time is required for processes, systems, products and services that are yet to be developed. In the beginning, the focus lies largely on extending the service and technical life and reassignment of assets within the Central Government and from the market. The aim is to achieve a ratio of 80-20 (80% reassigned furniture and 20% new circular furniture).

In the course of the programme, the focus will shift to new circular furniture. By that time, the market will be more mature with respect to circular economic propositions, and internal systems will have been developed which facilitate internal circulation more effectively. Once again, the goal is a ratio of 80-20, but this time 20% reassigned furniture and 80% new circular furniture. Both lines will continue to exist side by side since enough furniture has been produced from which we can source our needs for quite a long time. However, it is important to shift the focus in order to avoid wrong incentives, such as the manufacture of furniture which is difficult to reassign, short-term use with the intention to sell as 'reassigned' to receive the qualification 'circular'.

OPERATIONALISATION - OUTSOURCE OR DEVELOP IN-HOUSE?

There are various options for developing the knowledge and skills required to implement and manage a circular category: outsourcing, purchasing or developing internally. A combination of internal management and external services is recommended since this will provide the greatest insights and control. The advantage is that the Central Government remains in control of the reassignment of existing furniture and that the purchase of new furniture can be planned better. This requires a controlling role to be assumed by a party, in a central place of the organisation. With this model, the insight, knowledge and experience required for circular operations will be built up.

The corresponding market strategy is: 'In-house, unless the market can do it better.' Activities that fit in with the internal operational processes and those that could be better contracted out to a supplier are identified. For example, gaining insight into the furniture asset situation in order to be able to plan for changing capacity is an activity that is close to operations. However, maintenance or logistical work does not affect the heart of the operational processes and is therefore better outsourced. This work is now already being procured externally.

The scope of Procurement can therefore be expanded with the necessary additional services to be coordinated in the areas of maintenance, repair, logistics, storage, etc. Some of the new services can probably be included in addition to existing contracts, such as repair companies or removers.

An alternative for the model of internal management with external services is to keep all the activities in-house. The capacity for closing the various cycles would then have to be available or developed in-house (including storage and logistics). This would require a thorough analysis of the various ministries, identifying where certain capacity is already available and in what areas this capacity would have to be built up.

A possible advantage of the second approach is that more jobs would be created within the government. A disadvantage is that a great deal of capacity for, for example, repair and refurbishment would have to be built up which does not form part of the core tasks of the government. Also, such an approach would deprive the market of the incentive to develop activities for a circular economy. Moreover, it would require a far-reaching centralisation of processes that support a circular category. Because of the differences between the ministries, this could be a step too far.

A third option would be to completely outsource to market operators and only procure the function of office furniture. In that case, the necessary maintenance and repair work throughout the service life of the furniture would be included in the service of the product. Services can also be procured in the first model, but the difference is that the supplier is responsible for the performance of the product throughout the agreed period and that it is in his or her interests to carry out proper maintenance work him/herself. The supplier would therefore have to decide when to invest in the maintenance and repair of assets, not the user.

The question whether this model could work in the current tendering system would have to be investigated further since the periods for which contracts are concluded are shorter than the extended service life a circular category would aim for. There seem to be possibilities from a purchasing perspective. It is recommended that this be put to the test in a tender. A drawback of this option is that the Central Government would relinquish control, would be more dependent on the market for the speed of development and, due to a lack of knowledge and insight, would find it difficult to make adjustments in order to achieve its goals. Moreover, it does not guarantee that current assets will be used as optimally as possible.

The latter model can be adapted by making a distinction between coordinating the reassignment to a party and the performance of the facilities activities, such as maintenance, repair, logistics and storage by another party. As part of a consortium with the client or without.

FOR CONSIDERATION

Two specific points on the strategic options for further examination. Firstly, the category has a limited sphere of influence and cannot manage all the operational processes that are necessary for a circular category. The phase model took the core tasks of category management as a starting point: optimal procurement, making good use of contracts and influencing demand. Category management must be able to exert influence on facility management, budget management and policy if it is to hold out the prospect of less expensive, better and future-proof office furniture to the category's clients and the end users.

Secondly, the market is still only in the initial phases of a circular economy in various segments and within the Central Government knowledge and experience still have to be developed further. It is recommended that options be tried out in various pilot programmes and that the market be tested with different procurement strategies and contract templates. All systems, including economic systems, thrive on diversity. To some extent, standardisation is also recommended for the Central Government so that exchanges can take place. However, diversity, for example in its relationships with the market, is also important.

OBSTACLES & CRITICAL SUCCESS FACTORS

As the transition to a circular category has an effect on the current allocation of duties and roles, knowledge and skills and the cooperation between the departments, it is important to take account of any obstacles and success factors. This chapter outlines the main points of the issues shown below. Advice on how they should be dealt with will be further assessed in Chapter 9.

1. Knowledge, Management Support & Culture;
2. Market Maturity;
3. Policy;
4. Organisation & Responsibilities;
5. Data & Systems;
6. Budget & Depreciation.

1. KNOWLEDGE, MANAGEMENT SUPPORT & CULTURE

Obstacles

- Lack of knowledge with respect to the circular economy and circular operations in the various executive organisations, but also in the market itself. As a result, the implementation of circular procurement and propositions is progressing very slowly. This knowledge gap can on the one hand be explained by the novelty and complexity of the issue. On the other hand, there is a perception that existing templates and examples are inadequate, although there are plenty of good cases in the organisation that have not been labelled 'circular';
- Limited support for the various types of circular models, such as reuse. It is often perceived that only new products can be of high quality.

Success factors

- Use of internal communications to create support, by sharing information on successful examples and the economic potential of a circular category;
- Build up the knowledge base by carrying out a number of successful pilot projects and secure knowledge through proper documentation and the assessment of processes;
- Changing the view that reassigned furniture is not necessarily inferior;
- Actively develop circular propositions in a continuous process with the market. Knowing that you should look beyond the established parties since many new skills lie hidden in unconventional segments.

2. MARKET MATURITY

Obstacles

- Limited supply of repair, refurbishment and reassignment services in several cycles, in any case among

traditional parties;

- Because of the novelty and complexity of the issue, there are very few cases of reuse in third and subsequent cycles. Also, there are not many examples of contract templates which guarantee that several cycles will be realised, also after use within the Central Government.

Success factors

- Placing the responsibilities for products, processes and activities with the party that can best carry them (user, suppliers, service providers);
- A clear (financial) incentive for providers to also take responsibility for products, components and materials after the 1st and 2nd service cycles;
- Transparency of and insight into activities that enable reassignment of furniture;
- Looking beyond the usual suspects, at parties for whom the desired activities are part of the core operations and business model.

3. POLICY

Obstacles

- The long road from decision-making and policy-making to provide frameworks for new topics, particularly topics with an innovative character as circular economy, along with the tension between policy-making and the need for proven concepts. On the one hand, the category and procurers need a framework for circularity. On the other hand, the DGOO needs conceptual evidence that something is feasible before policy can be based on this;
- Policies that affect procurement are now set out in various places, and not all actors are affected by the same policies or objectives.

Success factors

- Policies with clear guidelines for circular operations and circular procurement, such as specifications regarding the length of a service life, technical requirements, etc.;
- Embedment in as many policy and procedural documents as possible, such as the category plan and ministerial policy

4. ORGANISATION & RESPONSIBILITIES

Obstacles

- Responsibilities for activities that may affect the service and technical life of furniture are fragmented within the organisation. Some of the activities that contribute to a circular category fall within the competence of another

category, such as logistics and storage. Procurement and Facilities departments also differ in terms of budgeting and responsibilities for the purchase and maintenance of furniture.

Success factors

- Shared interests between procurement and facility departments regarding a circular category;
- A comprehensive approach in which the entire life cycle of furniture is managed;
- A medium that facilitates the circulation of furniture throughout the government organisation and can align supply and demand. Parties that may be considered for such central services are: DRZ, RVB, external supplier(s) or a new central office, possibly managed by DGOO. Within the Tax and Customs Administration, a similar role is fulfilled by a 'Movable Property Agent', albeit only for their own organisation.

5. DATA & SYSTEMS

Obstacles

- Limited insight into current furniture asset situation and the purchase of new furniture. As a result, the length of the service life, the number of surplus furniture and the potential for reassignment cannot be controlled;
- Lack of guidelines for the technical life and minimum years of service life of furniture;
- Lack of (IT) systems that record the status, characteristics and development of assets;
- Surplus furniture, once offered to DRZ, cannot be withdrawn, not even if an appropriate use is found within the same ministry.

Success factors

- Insight into the current assets and knowledge of reassignment possibilities. Both the 'Knowledge Map Circular Economy' and the first report of the Ellen MacArthur Foundation state that 'awareness, tracking and conduct' are necessary to make circular economic processes possible⁴²;
- Standardisation in functional characteristics of furniture in order to achieve an easily exchangeable stock;
- Standardisation of processes in order to enable the exchange of information on the demand for and supply of office furniture between ministries;
- IT systems for managing assets, possibly in combination with Track and Trace of furniture;
- An efficient and effective alignment between the supply of and demand for office furniture within the Central Government;

- Monitoring maintenance contracts and performance criteria for contracts for office furniture.

6. BUDGET & DEPRECIATION

Obstacles

- The current cash accounting system⁴³ encourages budget holders to spend their budgets in order to avoid budget cuts in the following year – this does not encourage savings on the purchase of furniture. The whole of the Central Government was intended to have switched to the accrual accounting system in 2006, but this did not happen;⁴⁴
- Another contradictory incentive is the replacement of furniture on the basis of its economic life instead of its technical or service life, which are longer. The furniture therefore still has a continuous technical life when it is written off and replaced;
- No central organisation has the budget to set up a central asset management system for office furniture. Rijksmarktplaats is currently financed from sales at auctions. This can potentially result in a conflict with the maximum use of furniture within the Central Government itself, as they would have less objects to sell.

Success factors

- Review of the cash accounting system and the motivation of departments to realise savings. For example, FMH works with the accrual accounting system and savings in the organisation can be entered as 'profit'. FMH can also use savings on costs to finance other items within the organisation;
- The possibility to reallocate budgets for purchases (investment budget) to expenditure on extending the use of goods (operating budget);
- Budgets for:
 - management, maintenance and repair
 - logistics and storage
 - central management/market place function
- Change the depreciation system to writing off to a minimum residual/reassignment value (e.g. value of raw materials) to prevent goods from becoming 'valueless'. This will prevent furniture from being replaced prematurely and sends a strong message (from the Central Government) to the corporate sector.

⁴² Ellen MacArthur Foundation (2012). Towards a circular economy (Vol.1): economic and business rationale for an accelerated transition. Cowes, Isle of Wight, United Kingdom. The following website was consulted: <http://www.ellenmacarthurfoundation.org/publications> (April 2016).

⁴³ Parliamentary Monitor (2009). The accrual accounting system for the Central Government; Report - Budget and Accountability in Balance. The following website was consulted: <https://www.parlementairemonitor.nl/9353000/1/9vwi5epmj1ey0/vi3al7oytcwc> (April 2016).

⁴⁴ Parliament & Politics, Budget System. The following website was consulted: <http://www.parlement.com/id/vh8lnhrqzz2/begrotingsstelsel> (April 2016).

IMPLEMENTATION & ROAD MAP

The implementation steps have been defined according to the same stages as the strategy for a circular category:

- a. Circular operations with linear products:
 - Taking advantage of a shrinking central government;
 - Extending the service and technical life of existing products;
- b. Circular operations with circular products:
 - Building up a circular furniture supply

A number of issues relating to the implementation will then be explained per item: procurement processes, policy, communication and organisation.

1. CIRCULAR OPERATIONS WITH LINEAR PRODUCTS

Processes for service life-extending measures

The first step is to develop activities and measures that extend to the maximum the service and technical life of existing furniture. The following services will have to be facilitated in-house or procured externally for this purpose:

- **Maintain:** In order to maintain furniture in optimal condition, it is recommended that the furniture be thoroughly cleaned and inspected every one or two years so that any technical defects can be repaired immediately, before greater damage is caused;
- **Redistribute:** Logistics to facilitate the relocation of furniture (including (dis)assembly) and temporary storage to deal with situations in which internal supply and demand do not match;
- **Refurbishment:** The possibility to reupholster chairs, replace table tops or improve furniture in some other way. These services are also provided by parties other than office furniture manufacturers.

Insight into assets

In order to use current assets optimally, it is necessary to gain insight into what new furniture will be ordered and what will become available elsewhere: internal supply and demand. This can be done in the following ways:

- **Inventory of assets that become available as a result of a shrinking central government:**
 - An inventory and assessment of the furniture that becomes available as a result of the sale of buildings. According to information provided by the RVB (Master Plans), this analysis could be made by DRZ or in cooperation with a market operator that can also carry out the logistics and service life-extending measures;
 - A ministry-by-ministry overview of the workspaces that will become redundant and the furniture that will become available as a result.

- **Insight into the supply from current assets:**

- **Passively,** through DRZ as is now the case: organisations exchange discarded furniture via Rijksmarktplaats. The drawbacks are that currently no records are kept and that there is limited optimisation due to the lack of storage and service life-extending measures, amongst other things. DRZ also confirms that the full potential cannot be realised in the current situation;
- **Actively,** on an occasional basis: list the measures that are necessary to keep furniture in use during e.g. relocation, maintenance work or the purchase of new furniture. Preferably on an annual basis, in combination with maintenance;
- **Exercising active control** by keeping electronic records of furniture assets, including such information as: how long the furniture has actually been in use, the condition of the furniture and the maintenance work that has been carried out.

In an ideal situation, the records of the various organisations can be linked in such a way that one has an overall view furniture assets available within the Central Government and that optimal use can be made of the economies of scale of the Central Government for internal circulation. There is an important difference here between taking stock (temporal snapshot) and an asset monitoring system (management). Only a continually updated overview will provide sufficient insight for management and control purposes and enable the full potential of a circular category.

In an ideal situation, information in such a system is arranged according to:

- **Type:** number and category of furniture (chairs, tables, cabinets);
- **Origin:** brand, year of production, year of purchase;
- **Function:** activities that the item supports (work in a concentrated manner, work together, consultation, storage, rest/lounge);
- **Additional information:** such as the type of material or adjustable height for tables.

If necessary, the serviceability can be assessed from this information (e.g. consistent with the current working conditions legislation) and the usability (processing required before new applications).

In order to take optimal advantage of a shrinking central government, different contracts are required, in which suppliers use the government supplies as if they were their own assets: inventory, check, revitalise and reassign according to their highest utility and value. Circularity and performance criteria therefore form part of the requirements and must be included in new framework agreements. For current framework agreements, these services must be procured additionally.

2. CIRCULAR OPERATIONS WITH CIRCULAR PRODUCTS

While initial stages of the strategy are focused on setting up circular processes, the third step is focused on building up a circular supply. Agreements with suppliers regarding circular performance are crucial here. These can be reduced to three process components:

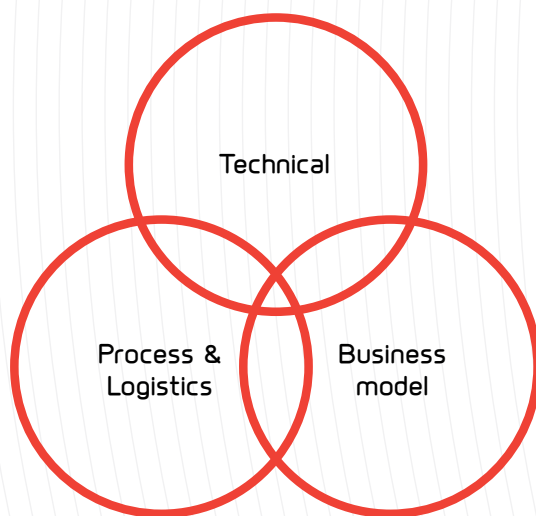


Figure 17: The combination of product, action and awareness in a circular economic proposition

An entry-level or growth model, which is coordinated with suppliers, also with regard to valuation (business model), is used to progress from the current situation to an ideal circular situation:

1. Assert (the promise that the product has a past and a future);
2. Document (record the history and future possibilities for use);
3. Value (the product has a guaranteed value after the current cycle, which is taken into account in advance, such as a residual, reassignment or repurchase value);
4. Calculate (the value being factored into the quotation);
5. Facilitate (the structures for reassignment are organised in a transparent way).

Suppliers can offer processes that facilitate several cycles, but these can only be realised in interaction with the user. Users can, for example, create performance agreements with suppliers

Product criteria

Three different stages are examined to assess the technical performance of furniture:

1. Impact of the manufacture of the product on material, energy and water sources (birth);
2. The possibility of keeping the product in use over several cycles (reanimation);
3. Conditions for high-value reassignment of the material at the end of its technical life (reincarnation).

A method for assessing the technical aspects is included in the table below. The content was initially intended for discussion during the research for this report. However, following a legal assessment, a selection, supplemented with specific scores, can be included in a call for tenders. These valuation aspects can be supplemented as the circular category develops further.

1. New product, 1st user (Birth)

1a	Material	<p>Recycled material (% of the total weight).</p> <p>Upcycled material (% of the total weight).</p> <p>Upcycled: the previous use was of lesser quality or had fewer applications than the new use.</p> <p>Organic material, preferably 'regrowable' within the service life of the product, obtained in a sustainable manner, separable from technical material (% of the total weight).</p>
1b	Production	<p>Exclusion based on alleged toxic substances or heavy metals.</p> <p>Energy source (higher valuation of renewable and local).</p> <p>Water source (higher valuation of local, without any negative effects on the environment).</p> <p>Water management (higher valuation of closed water cycle of the organisation itself).</p> <p>CO2 emissions per unit and compensation.</p> <p>Material efficiency (low valuation of wasteful use).</p> <p>Residual waste.</p> <p>Preclusion of waste incineration.</p>
1c	Packaging	<p>Material & Reuse (higher valuation of compostable material that will be composted, or reusable material that will be reused).</p> <p>Transport efficiency (higher valuation for carpooling or smart routes).</p>
1d	Logistics	<p>Distance factory-main market (higher valuation for local solutions).</p> <p>Transport efficiency (higher valuation for carpooling or smart routes).</p>

2. Maintain, Redistribute, Repair, Repurpose (Reanimatie)

2a	Design	<p>Design for Reuse.</p> <p>Design for Repair.</p> <p>Design for Refurbish.</p> <p>Design for Remanufacture.</p>
2b	Logistics	<p>Insight into location product and parts.</p> <p>Transport modes, knowledge of inbound and outbound logistics.</p>
2c	Handling	<p>Available workshop.</p> <p>Craftsmanship (knowledge & skills regarding necessary processing).</p>

3. Recycle (Reincarnation)

3a	Material	<p>Recyclable material (% of total weight).</p> <p>Upcyclable material (% of total weight).</p>
3b	Design	<p>Design for Disassembly.</p>
3c	Logistics	<p>Take-back system of the manufacturer or selected partners .</p> <p>Insight into location product and parts.</p> <p>Modes of transport.</p>
3d	Handling	<p>Available workshop.</p> <p>Craftsmanship (knowledge & skills regarding necessary processing).</p>

Figure 18: The technical parts for which the circularity of a product is assessed.

Possible contract templates

A supplier's business model determines the possible contract and the responsibilities the supplier and the user set out for the performance and the corresponding activities and services. There is no one contract template as such that produces the best circular results. It is advisable to experiment with different contract forms in a series of tenders in order to develop one or more forms that suit the needs of the Central Government or the CDV concerned.

Two models that are now frequently used in circular projects are performance-based contracts and a buy/buy-back contract. The former is a model that is mostly associated with circular economy. In this model, a service is completely outsourced to the market; only the function is procured.

In the case of the Central Government, a possible drawback of the first model is that the costs are not necessarily lower since the interest on private sector funding is higher than funding for the Central Government. Some suppliers need external funding in the beginning since they are in a transition phase in which the proceeds of the sale of products are spread out over their service life. After a while, they stop needing this funding when the new business model starts to pay off.

An advantage of this model is that for long-term performance contracts it is also in the interests of the manufacturer that the furniture will last and is properly maintained. Moreover, these types of contracts often offer scope to embrace innovative market developments or to repurpose the furniture if changing working methods require this.

The second model is buy/buy-back, in which the supplier is obliged to repurchase the furniture at the end of its service life at a certain price. Here it is also expected that it will be in the interests of the suppliers

to ensure high-quality material on delivery, guaranteeing a maximum value at the end of each service life and proper maintenance during its service life. Several variations on these basic models are possible, such as agreements regarding returnable deposits or purchasing products with technical-circular characteristics and managing all circular processes oneself.

3. FROM PILOT TO EMBEDMENT

A circular category is implemented in stages, moving from an experimental (pilot) phase, with a clear vision, towards a firmly established functional structure. The main steps in this process are:

1. Formulating a vision (this document);
2. Putting various options to the test in a series of tenders;
3. Creating internal support for and knowledge of a circular category;
4. Assessment of the pilots:
 - assessment of products and services on offer;
 - assessment of suppliers;
 - assessment of the choice for internal solutions or the contracting out of services;
 - assessment of procurement method and contract templates.
5. Embedment in category plan and government-wide implementation;
6. Systematically develop processes and an infrastructure for a circular category.

Figure 19 shows the road map in which these stages are arranged according to a timeline and the development of relevant issues is worked out. Some of these issues are elaborated on below.



ROAD MAP CIRCULAR CATEGORY OFFICE FURNITURE



Figure 19: The road map towards a circular category office furniture.

2017 - 2018		2018 - 2019	2020
Select best option per CDV		Implement in processes	Reassess services
Assessment chosen approach and results, assessment on savings: number of items of furniture and euros		Policy for realising 100% use of current assets	Assess chosen approach and results, assess savings: in numbers of items of furniture and euros
		Monitor to realise 100% insights in assets & 100% use of current assets	
Policy on work, when should inventory take place	Asset overview (according to previous defined targets)		Assess work and effectiveness chosen option
Instructions Maintenance & Use of Database	Asset overview (according to previous defined targets)		
Develop support through IT	Implement in processes, e.g. Contract Management		Assess functionality
Assessment pilot and definite route for scale up	Align with as many different ministries as possible		Assess functionality
Connecting parties, collect and analyse information	Draw up category plan, lobby for other policy instruments		Analyse and reassess
Analyse and provide input	Lobby within own circles for inclusion in policy and implementation		Analyse and reassess
	Lobby within own circles for inclusion in policy and implementation		
Assess and test objectives and results	Embed principles circular category in policy		Inventory state of affairs and reassess vision and objectives
Assess effectiveness current policy	Embed circular in new category plan, lobby for inclusion in policy DG00, etc		Analyse and reassess
Assess Process & Results	Finalise criteria		Reassess based on market developments
	Recommendations based on learnings pilots		Reassess based on market developments
	Organisational limits (what should be done in-house, what should be outsourced)		Reassess based on market developments
Tighten criteria			
Share feedback on analyses	Train teams for new tenders		Continuous training process
Choose which processes outsource or develop in-house	Recommendations based on experience pilots		Reassess based on market developments
Reporting learnings and recommendations. Gap Analysis Call for Tenders & Results, Obstacles (e.g. maturity of the market)	Category plan and inclusion in other policy documents		Tighten objectives
Assess achievement objectives	New circularity KPIs in internal policy and implementation documents		Tighten objectives category, CDVs, departments, persons.

PROCUREMENT PROCESSES

Market strategy

The chosen market strategy is: 'In-house, unless the market can do it better.' This does not mean that all the activities that are normally outsourced to the market will now be insourced, but that a close look is taken at what lies close to the organisation's own operations.

It helps to have antennae in the market and hold market consultations when implementing this market strategy. The move towards a circular category is a continuous development process in which solid commissioning is desired. Do not wait for the market to orient itself towards circular procurement, but take control and responsibility by being the driving force behind this development. From this position, the market can be invited to provide input on desired processes.

Process

The new process includes the following: involve procurement as early as possible, assemble interdisciplinary or interdepartmental teams and readjust steps in the process. In the initial steps, time is taken to identify the requirements based upon a clear vision and goals. Not translated into design details or brands, but functional wherever possible, of course in line with the (corporate) identity. It takes a team effort to stay focused on this. It will then be possible to enter into a dialogue with the market, during which parties can impose conditions on their services or the design. It should be possible to tighten the requirements or a design after this step.

Award and selection criteria

In order to assess an offer, one must be able to establish whether a circular mode of operations forms part of the offering organisation or is just window dressing. Indicators can be used to assess whether parties have sufficient insight, experience and/or capacity. However, the issue of materials and a circular economy has not yet progressed as far as CO₂ or energy, and there is still much debate about indicators.

Different mechanisms are required to assess the three process components of a circular product when assessing and comparing offers: technical product characteristics, process & logistics and valuation. A table with technical aspects is included in Figure 18. The facilitating processes & logistics usually depend on a specific context and on requirements. Valuation can take place in different ways, depending on the supplier's business model.

To prevent only second-hand, non-circular furniture from being offered or delivered when inviting tenders for a mix of new circular furniture and reassigned office furniture, it is important to include requirements in the call for tenders and conditions in the framework agreements. A suggestion is to include technical product requirements, such as detachable, the possibility to repair and replace parts, storage facilities and basic inbound and outbound logistics, and without harmful substances. A tender will be at an advantage if the furniture has had a previous life.

The strategy for a circular economy is based on a growth model, both to encourage the own organisation as the market. A large number of suppliers who do not yet have an integrated proposition for a circular economy could quickly develop one, mainly in cooperation with the user.

This means that it is not always possible to submit previous work examples as evidence of the capacity during the selection process. It is therefore better to not request references of identical assignments in a certain format as criteria, also because this would exclude new parties or combinations of parties. Recommended is to pay good attention to this in the market approach, and to ask for information supporting promises and incentives for good conduct.



Figure 20: Expand the initial steps of the purchasing process.

Examples

Two examples to illustrate how processes or assessments can be implemented differently:

- A conscious choice was made for a 2-step process for the new Alliander head office: An initial call for tenders for a vision on housing based on five key goals. The selection of an appropriate vision was followed by a second call for tenders for a design in which the vision was implemented. Ample time had been set aside for Step 1 (6 months); Step 2 (design) therefore went very quickly.
- Traditional tenders are often price-based (economically most advantageous tender); quality-based tenders - with a fixed budget - could encourage new propositions. Experience of procurement in this segment learns us that pennywise is pound foolish. The new procurement directive requires that the price always forms part of the substantive assessment criteria. It seems to be possible to assess for other price-quality ratios, possibly in combination with a price ceiling.

POLICY

To encourage additional policy making, it helps to show examples of successful cases. This method can be seen in several initiatives by innovators. Strong advice in this approach is not to develop new initiatives in isolation, but to maintain clear lines of communication to, for example, DGOO and the ministries concerned. A few lines that should definitely be involved in this interaction are: policy-makers at DGOO, CDVs and the client (especially major parties such as the RWS, the Tax and Customs Administration, FMH and the Ministry of Defence).

The CDV DJI, FMH and the Ministry of Defence indicated that they have for some time been working with internal policies in the form of a three-stage model for meeting the demand for new office furniture:

1. First research what is available in your own area;
2. Then research what is available on Rijksmarktplaats and within other CDV;
3. If nothing is in stock, only then make procure new. However, practice shows that there is still enough leeway to decide immediately to purchase new furniture without examining the other options.

The following priorities can be set to pursue the current policy and encourage new policies:

1. Seek, endorse and communicate as much as possible alignment with existing policies in order to stop a circular category from being regarded as an additional label. The main starting points that have been identified:
 - Category plan;
 - Fact Sheet Physical Working Environment of the Government (FWR);
 - State Catalogue (Rijkscatalogus);
 - Objectives of the ministries and CDVs;
 - Sustainability Agenda drawn up by DGOO (intended to firmly establish sustainability and circularity in various processes by combining objectives);
 - Annual Report of the State's Conduct of Internal Management (chapter on sustainability)
2. Draw up the new category plan based on the vision, goals, objectives and activities shared in this report.
3. Communicate widely within the Central Government on the start, implementation and results of new pilots and which policies have a stimulating or inhibitory effect.
4. Establish sound frameworks by the top management (amongst others the DGOO), which should be very clear about the overarching vision and goals and give direction to processes the category cannot implement itself. Policy documents, such as the FWR Guide and State Catalogue, already give handles for the implementation of a circular category, but do not provide guidance for all the stakeholders. Bodies which define the scope should streamline (common) interests.
5. Seek alignment and, wherever possible, redefine the objectives of persons, departments or organisations. The paradigm of circularity is still being strongly expressed on itself, without realising that it affects everyone's activities and, as a result, objectives.

Activities 1 - 3 can be carried out by Category Management in cooperation with the client council. However, the category only has limited influence on activities 4 and 5; these processes must be implemented outside the category.

COMMUNICATION

Content & Function

Internal communication and support are success factors for the further development of a circular category. There is a clear need in the organisation to develop and share more knowledge. The use of internal communication serves three purposes here:

1. Expand the current options (action): share knowledge and cases in a way that prompts action on the internal and external circles. Build on what is already possible but has not yet been standardised;
2. Enthuse for the topic (attitude), knowing it is still being developed. It takes determination to, together with the market, consciously and actively embark on a process that is continually developing further;
3. Remove the prevailing prejudices against reassigned furniture. As one respondent said: 'Everything depends on it not being "old junk" and the guarantee being the same.' Previous cases show that users at the place of work are often unaware of and do not hold an opinion on new or reassigned furniture or purchased, rented or performance-based furniture.

These functions can be fulfilled through active communication on:

- a. The economic, political and social potential of the issue. The economic potential in particular is an issue that also deserves administrative attention in order to overcome any internal barriers and obstacles;
- b. Successful cases that inspire confidence among and fuel the ambition of employees.

Point b can be implemented through better communication of the success stories that already exist in one's own organisation. Little or nothing is known about these cases; the facilities departments involved indicated that they are better at implementing than at communicating about this. The networks of the category and the client council can respond to this by sharing examples.

Target groups

The objective of the first communication function is to have internal clients use services that are already possible, such as reassigned furniture. Two groups can be identified in this:

- a. Stakeholders who find this interesting and appropriate, but who have not yet recognised their role or possibilities in this. It is expected that, by communicating more on the vision, potential, cases and a clear question, they can be involved more effectively in their role;
- b. Stakeholders who still do not recognise the relevance,

who expect resistance among their own clients and who need more argumentation. This group will benefit from a communications strategy in which awareness is raised and enthusiasm created as a result of repeated communications.

Activities

If possible, an activity agenda should be drawn up in order to guarantee communications on a circular category in a structured way, such as:

- Presentations for specific groups (decision-making bodies such as CDVs, RVB, Chief Engineer, Architects, ICs);
- Presentations during interdepartmental consultations, such as the client councils;
- Continuously provide 'ambassadors' with input from the category on the results of pilot cases, realised savings, etc.;
- Form a 'coalition of the willing' per CDV which puts this on the agenda in case of internal developments;
- Snowball effect: ask round-table participants and client councils to also share this in a subsequent event, etc.;
- Mailing on the report and a targeted distribution of the executive summary

ORGANISATION

Interdepartmental cooperation

The close cooperation between different departments and disciplines is a requirement for realising a truly successful circular category. On the one hand, the procurement and implementation of all service life-extending measures requires strong lines between Procurement and Facilities. On the other hand, exchanging furniture and overcoming (perceived) hurdles require a strong vision and interests that are shared by RVB and CDV and by DGOO and the category.

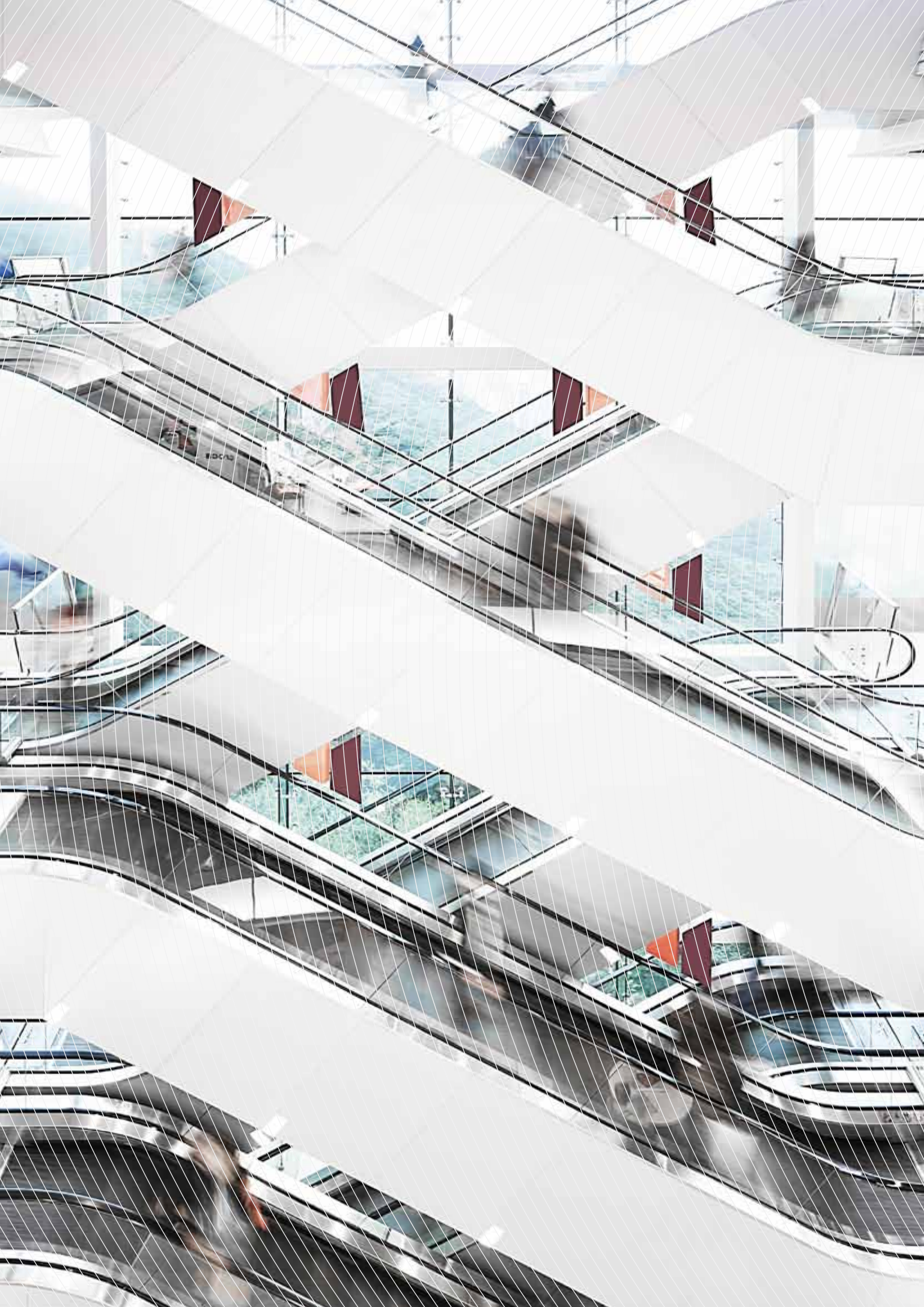
Regular consultations between the same disciplines of different ministries enable the sharing of experiences and solutions. An interdepartmental meeting between, for example, controllers offers solutions for accounting obstacles, such as the accrual accounting system and investment vs. operating costs, since this is organised in different ways in different CDVs. The current client council is a useful example of this.

In order to monitor the goals of a circular category in requirement-identification and procurement processes,

it is also recommended that departments meet at an even earlier stage. Especially in the case of new construction or renovation work, where there is a visible trend that architects require many tailor-made solutions, which is then considered advice to be implemented. The recommendation in these processes is to get the CDV to the table earlier, or the architects later, when it is known which materials are available and interior design requires true creativity and skills.

Knowledge Management

The Central Government has accumulated a lot of knowledge in the area of office equipment over the years, but it is often fragmented. This knowledge is very diverse, ranging from space, function, furniture and requirements to the fulfilment of requirements. For the progression towards a circular category and the dialogue with market operators, it is important to manage this knowledge more effectively, for example in a central role as a knowledge manager. A role which is not intended to refine a person, but to safeguard a more effective exchange of knowledge on this topic within the Central Government.



RECOMMENDATION FOR FOLLOW-UP



Figure 21: Moving from the original need for circular procurement to standardisation in the organisation.

STAGES

This report fits in with a larger programme, in which a new standard is developed for the category Office Furniture by means of a motivating vision and pilots. A standard in which the preservation and value of materials is guaranteed by developing activities and structures for several life cycles of office furniture. Procurement is only one part of the playing field in the transition process, among interdepartmental cooperation, readjusting steps in this process and using the market to help shape the process under the direction of professional procurement.

The horizon is determined on the basis of research analysis and vision: a fully circular category. A phased growth model shapes the strategy, in which short-term gains from furniture that becomes available and service life extension are used to develop the processes, systems, products and services for a circular category. The market strategy here is: under own management with external services.

Starting today, the category can take steps in three different areas:

1. Learn from tenders;
2. Interdepartmental consultations as a means to help overcome initial hurdles;
3. Increase the level of internal support through policy and communication.

The category plays an active role in 1, a facilitating role in 2 and a driving role in 3.

1. NEW TENDERS

The follow-up to the vision and road map that were developed with the project team, consists of issuing a number of (pilot) tenders for assessment and learning. These tenders serve several purposes:

- Assess the frameworks and learn to develop new structures using market input on tender design, selection and preferred cooperation models;
- Further analyse the maturity of the market;

- The tenders may include baseline measurements of the current status of office furniture within the Central Government, for example in the average service life or condition.

During the next three tenders, different parameters can be used to examine which set-up is successful in what situation, in order to establish which activities are required for a circular category. Diversity in parameters can result from:

- defining activity (outsource activities or develop in-house);
- defining the needs (service, product or system);
- choice of procurement process (process steps, model and parties involved);
- selection process (exclusion, selection and award criteria);
- contract formation.

In order to promote diversity in the first and last bullet points above, it is recommended that the process is always kept the same. The contract design could form part of the call for tenders, for example, by also asking the tenderers for a description of the role allocation and responsibilities that create a context for them to realise their bids.

A variable that is unavoidable but that can also be useful, is the difference in organisational culture between the ministries. The pilots can hence be used to see (un)successful characteristics or solutions to hurdles.

For the market consultations, it is recommended that the goals and objectives be presented not only to the usual parties, but also set up dialogue sessions with completely different segments, such as facilitators, rental companies, cleaners, removers, etc. Depending on the functional requirements, it is advisable to consider which business model in the market is best fitted for this. Interesting propositions may emerge from surprising new sources.

With regard to new framework agreements, it is recommended that the demand for office furniture is met by means of the mix of furniture explained below. This recommendation follows from best practices, in addition to the gains of a circular category in the short term. The mix consists of:

1. The largest number of articles available within the organisation, in combination with life-extending activities, as maintain, repair and repurpose;
2. Reassigned furniture from other parties that has already passed through one or more cycles and, and meets
 - (a) external appearance
 - (b) modular design/adaptability and
 - (c) the availability of spare parts serving the potential to pass through several other cycles, in combination with service life extending activities;
3. If 1 and 2 are not in stock, procure new items under a contract in which the supplier guarantees that several cycles will be facilitated and valued, based on the three-systems model described in Chapter 2 (technical requirements, process & logistics and business model).

This mix has proven to be effective and economical. Firstly, since it makes as much use as possible of what is already available (sustainable and economical). Secondly, any possible prejudice against reassigned furniture is avoided as users are unable to tell which elements in the mix are what. Thirdly, this creates opportunities for cooperating in the further development of a proposition, and raising the standard, since suppliers are able to learn and develop on the job.

2. OVERCOME INITIAL HURDLES

Chapter 8 identifies a number of obstacles that now stand in the way of a smooth transition to a circular category. More interdepartmental consultations, as are already taking place with the Office Furniture Client Council, will provide some solutions. Because of the organisational differences between the CDVs, an obstacle may occur in one ministry and not at all in another.

An interdepartmental consultation between controllers and budget holders is a good place to start. For instance, it appears that FMHaaglanden works with the accrual accounting system, which stimulates the realisation of savings. The CDV Custodial Institutions Agency, which works with the cash accounting system, is carrying out a study on improved record keeping throughout the public sector. Examples of other ministries may serve as solutions, also for dilemmas to come.

3. INTERNAL SUPPORT THROUGH POLICY AND COMMUNICATION

The tensions between frameworks and implementation can be seen in the category's area of activity. If the various stakeholders do not share the same objective for a circular category, the category only has a limited number of instruments with which it can strive to achieve this. The driving role of the category mainly lies in:

1. Contributing to the tightening of two important policy instruments: FWR Guide and State Catalogue.
2. Encourage and raise the matter of how CDVs are involved at an early stage (e.g. at the early stages of new housing developments of the RVB or other renovations) within the council of clients.
3. Use communication channels to increase knowledge of the potential gains of a circular category and the support for it.

There is interest in and enthusiasm for the transition to a circular category throughout the organisation. Initiatives are being taken at several levels and in different categories. This is precisely what makes it interesting to share knowledge and best practices, to a much greater extent than now. For example, if there is little experience with asset management within the category Office Furniture, other categories may have more practice with this. Moreover, service categories (e.g. Security, Catering and Cleaning) may also have good examples of service contracting, which are useful for a circular approach within the category.

It appeared that there were more success stories in the organisation than known. Sharing these best practices increases the level of support for a circular category and helps identify the existing gaps in knowledge and implementation. Working together on the further development of knowledge implies periodic internal status updates in a way that fits in with the organisational cultures.

FOR FURTHER INVESTIGATION

As included in the road map, the study conducted for this report identified aspects that require further consideration. On the one hand, to form an impression of an ideal model (e.g. of asset management or internal logistics) which fits in with the goals and organisational culture. On the other hand, to gain insight into the current status and processes so that the following steps to an ideal model can be taken.

This study calls for a further investigation of:

- A platform that not only facilitates a perfect match between the supply of and demand for office furniture, but can also be expanded to asset management – a potential link to Rijksmarktplaats;

- The diversity between ministries to identify opportunities and obstacles in logistics, maintenance and repair;
- Current IT systems and the possibility to include asset management in it;
- The addition of inventory or monitoring to existing or in new contracts;
- Appropriate contract templates and resources for contract management. The specific label of 'circular' is not the only characteristic to identify suitability of templates and processes, existing templates might seem suitable with minor alteration;
- Legally assess the extent to which technical product and production aspects may be included in tenders.

The keys to success are: using the networks within the government organisation, sharing experiences and, in particular, continue to develop while maintaining a high level of ambition. After all, 'doing is the best kind of thinking.'

CALCULATION OF THE SAVINGS

SAVINGS FROM REASSIGNING SURPLUS FURNITURE FROM A SHRINKING GOVERNMENT

Explanatory notes: Shown amounts have been rounded off; the full amounts were used in the underlying formulas. A manual check of these amounts may therefore reveal minor differences.

Year	Savings realised by DRZ (1) 2013-2015		
	2013	2014	2015
Workspaces			
Total number of FTEs within the Central Government (3)	109,098	108,834	109,000
Total number of workspaces within the Central Government (4)	n.b.	n.b.	n.b.
Total number of surplus workspaces	n.b.	n.b.	n.b.
Total number of offered workspaces (desk chair, table, 1/4 filing cabinet) (5)			
Number of immediately reassignable workspaces	2,245	1,407	1,259
% immediately reassignable (Source: DRZ 44% / External Party 20%)	44%	44%	44%
Number of reassignable workspaces following refurbishment	0	0	0
% reassignable following refurbishment (Source: DRZ 55% / External Party 31%)	0%	0%	0%
Number of workspaces sold through an auction house	1,276	799	715
% sold through an auction house (Source: current procedure of DRZ)	25%	25%	25%
Number of workspaces for material processing	1,582	991	887
% sold for material processing (Source: DRZ / External Party) (6)	31%	31%	31%
Total offered workspaces	5,102	3,198	2,861
(Source: calculation based on data DRZ)			
Savings through reassignment workspace (desk chair, table, 1/4 filing cabinet) (5)			
Savings on new workspaces from immediate reassignment	€ 2,245,000	€ 1,407,000	€ 1,259,000
Costs of reassignment (Logistics & Storage, Cleaning & Inspection))	€ 122,072-	€ 76,506-	€ 68,458-
Savings on new workspaces from refurbishment	€ 0	€ 0	€ 0
Refurbishment costs (ditto + Refurbishment)	€ 0	€ 0	€ 0
Total savings workspaces	€ 2,122,928	€ 1,330,494	€ 1,190,542
% of the total savings potential	27%	25%	20%
Additional savings office furniture (7)			
Conference furniture, armchairs, settees, standing tables, etc	€ 5,306,951	€ 3,850,107	€ 4,547,080
Drawer units	€ 354,710	€ 222,306	€ 198,922
Total additional savings office furniture	€ 5,661,661	€ 4,072,413	€ 4,746,002
% of the total savings potential	73%	75%	80%
Total savings from reassignment office furniture (8)	€ 7,784,589	€ 5,402,907	€ 5,936,544

(1) DRZ indicated that only 28% of surplus workspaces are reported to DRZ.

(2) Assuming that 100% of surplus workspaces are reported.

(3) Sources: 2014 Annual Report of the State's Conduct of Internal Management, Labour Market Analysis Central Government, looking ahead to 2016 and 2020, p. 4; Working in the Public Sector 2015, Trends and Figures.

(4) Assumption based on a decrease in the number of staff in combination with a decrease in the workspace standard FTE/workspace from 0.96 to 0.8 in 2020.

(5) The figures of DRZ are based on a workspace incl drawer unit. This no longer applies: the amount has been adjusted to a workspace with a desk chair, table and 1/4 filing cabinet for the purposes of comparison.

(6) The assumption of 25% is based on the current averages of external parties. This percentage will fall as the supply displays more characteristics for circulation.

(7) Workspaces only account for part of the € 40 million category expenditure; other types of furniture (e.g. conference and lounge areas) are also included in this budget. Additional savings are realised from reassignment and service life extension for this type of furniture, based on the following assumptions:

I. According to DRZ, other types of furniture, incl about 20% extraneous items, such as beamer and plants, account for 70-80% of the savings it realised over the past few years.

II. It was estimated in this overview that the other types of office furniture may account for 55% of the total savings. This is a rather conservative estimate, since DRZ charges a unit price of € 148 for the goods as proceeds per item. An analysis of the data shows that 75% of the reported goods consist of furniture that represents a higher value in case of internal reassignment.

(8) The savings of DRZ, as included in the Annual Report of the State's Conduct of Internal Management, are slightly higher since the costs of logistics were excluded. The ministries bear these costs themselves. In order to be able to compare this calculation, the costs of logistics have been included separately.

Potential savings 2016-2020 per year (2)

scenario 1 20% immediate reassignment		scenario 2 44% immediate reassignment	
2016 - 2020/year		2016 - 2020/year	
2015: 109,000 2020: 94,000 2020: 75,000 4,911		2015: 109,000 2020: 94,000 2020: 75,000 4,911	
982 20% 2,701 55% 0 0% 1,228 25% 4,911		2,161 44% 1,522 31% 0 0% 1,228 25% 4,911	
€ 982,253 € 53,410- € 2,701,195 € 652,001- € 2,978,037 45%		€ 2,160,956 € 117,502- € 1,522,492 € 367,491- € 3,198,455 45%	
€ 3,639,823		€ 3,909,223	
€ 3,639,823 55%		€ 3,909,223 55%	
€ 6,617,861		€ 7,107,677	

BASIC NUMBERS

Expenditure new furniture		Origin of the data	
Workspace = desk chair, table, 1/4 filing cabinet and cable management	€ 1,000	Category Office Furniture.	
Workspace = desk chair, table, drawer unit (calculation DRZ)	€ 1,158	DRZ (used to calculate drawer unit).	
Costs of Maintenance, Refurbishment and Logistics			
Cleaning & Inspection			
Workspace on the basis of desk chair, table and 1/4 filing cabinet	€ 23	Average prices on the basis of market analysis.	
Refurbishment (incl logistics)			
Workspace on the basis of desk chair, table and 1/4 filing cabinet	€ 187	Average prices on the basis of market analysis.	
Logistics & Storage (based on 6-month storage)			
Workspace on the basis of desk chair, table and 1/4 filing cabinet	€ 32	Average prices on the basis of market analysis.	
Calculation decrease in the number of workspaces due to shrinking government 2015 2020			
Number of Civil Servants	116,000	100,000	(3) 2013 ratio used for 2015 and 2020.
FTE's	109,000	93,966	(3) 2013 ratio used for 2015 and 2020.
Proportion Civil Servants/FTE's	94%	94%	Calculation ratio Civil Servants/FTE's.
Workspace standard	0,96	0,8	(3) Category Office Furniture (goal 0.7 vs. reality 0.8).
Number of workspaces	104,640	75,172	Calculation based on workspace standard 2015 (0.96) and 2020 (0.8).
Decrease in the number of workspaces 2015-2020 (6 years)		29,468	Calculation
Decrease/year		4911	Calculation

SAVINGS WITH SERVICE LIFE EXTENSIONS THROUGH PREVENTIVE MAINTENANCE - 4 CASES

Case: Annual preventive maintenance + refurbishment

Number of new workspaces per year - currently	€9,375
Number of new workspaces per year - with service life extension	€4,688
Purchase costs workspaces per year - currently	€ 9,375,000
Purchase costs workspaces per year - with service life extension	€ 4,687,500
Maintenance costs per year (all workspaces every year)	€ 1,715,625
Refurbishment costs per year (all workspaces after 8 years)	€ 1,753,125
Potential savings per year	€€ 1.218.750
Annual savings in relation to new purchases	13%

Case: Annual preventive maintenance

Number of new workspaces per year - currently	€9,375
Number of new workspaces per year - with service life extension	€4,688
Purchase costs workspaces per year - currently	€ 9,375,000
Purchase costs workspaces per year - with service life extension	€ 4,687,500
Maintenance costs per year (all workspaces every year)	€ 1,715,625
Potential savings per year	€€ 2,971,875
Annual savings in relation to new purchases	32%

Case: Two-yearly preventive maintenance + refurbishment

Number of new workspaces per year - currently	9,375
Number of new workspaces per year - with service life extension	4,688
Purchase costs workspaces per year - currently	€ 9,375,000
Purchase costs workspaces per year - with service life extension	€ 4,687,500
Maintenance costs per year (all workspaces once every 2 years)	€ 857,813
Refurbishment costs per year (all workspaces after 8 years)	€ 1,753,125
Potential savings per year	€ 2,076,563
Savings per year in relation to new purchases	22%

Case: Two-yearly preventive maintenance

Number of new workspaces per year - currently	9,375
Number of new workspaces per year - with service life extension	4,688
Purchase costs workspaces per year - currently	€ 9,375,000
Purchase costs workspaces per year - with service life extension	€ 4,687,500
Maintenance costs per year (all workspaces once every 2 years)	€ 857,813
Potential savings per year	€ 3,829,688
Savings per year in relation to new purchases	41%

BASIC NUMBERS

Number of workspaces and annual replacement	
Number of workspaces	€75,000
Average service life (in years) - currently	8
Number of new workspaces per year - currently	€9,375
Average service life in years - with service life extension	€16
Number of new workspaces per year - with service life extension	€4,688
Expenditure on new furniture	
Costs workspace (table, desk chair, 1/4 filing cabinet)	€ 1,000
Costs of Maintenance, Refurbishment and Logistics	
Cleaning & Inspection	
Maintenance costs per workspace per year (Cleaning & Inspection)	€ 23
Maintenance costs in case of two-yearly maintenance (Cleaning & inspection)	€ 11
Refurbishment (incl logistics)	
Refurbishment costs after 8 years (upholster chair/new table top)	€ 187

Origin of the data	
Expectations for 2020 in order to prevent duplication as a result of savings from shrinkage scenario (1).	
Assumption: Based on information from CDVs concerning the depreciation period.	
Calculation based on 75,000 workspaces and replacement after 8 years.	
Input market operators: due to high quality of Central Government assets service life extension can easily be met by 100%..	
Calculation based on 75,000 workspaces and replacement after 16 years.	
Source: Category Office Furniture.	
Source: Average prices based on meetings with specialised market operators.	
Source: Average prices based on meetings with specialised market operators.	
Source: Average prices based on meetings with specialised market operators.	

(1) Sources: 2014 Annual Report of the State's Conduct of Internal Management, Labour Market Analysis Central Government, looking ahead to 2016 and 2020, p. 4; Working in the Public Sector 2015, Trends and Figures.

Explanation of the figures used:

Because it proved to be difficult to collect complete data, public sources were used for the number of employees and projections to 2020. Whenever figures were calculated or an assumption was made, this is explained, and a conservative approach was always taken so that the savings would not be represented too optimistically. The costs of maintenance, repair and refurbishment were provided by market operators with this as a core activity. Suppliers who have sub-contracted this are expected to be more expensive. Shown amounts have been rounded off; the full amounts were used in the underlying formulas. A manual check of these amounts may therefore reveal minor differences.

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LITERATURE

Dijkstra, R., Pijnenborg, A., Kirkman Company (2015). Circular procurement of furniture... worth looking into! Report commissioned by UMC Utrecht.

DGOO. State Catalogue Standard Workspaces and Dynamic Archive.

DGOO (January 2015). Fact sheet physical working environment Central Government.

Duurzaam Bedrijfsleven in cooperation with Desso and Turntoo (2014). Study on circular operations and reduction in CO2 emissions (internal document).

Ellen MacArthur Foundation (2016). Circular Economy. The following website was consulted: <http://www.ellenmacarthurfoundation.org/circular-economy> (April 2016).

Ellen MacArthur Foundation (2012). Towards a circular economy (Vol.1): economic and business rationale for an accelerated transition. Cowes, Isle of Wight, United Kingdom. The following website was consulted: <http://www.ellenmacarthurfoundation.org/publications> (March 2016).

Het Groene Brein (2015) Knowledge Map Circular Economy. Commissioned by the Central Government and Het Groene Brein.

Ministry of the Interior and Kingdom Relations, Directorate-General for Governance and Kingdom Relations, Public Service Labour Affairs Department (September 2015).

Working in the Public Sector 2015, Trends and Figures. The following website was consulted: <https://www.rijksoverheid.nl/documenten/rapporten/2015/09/25/werken-in-de-publieke-sector-2015-trends> (February 2016).

Ministry of the Interior and Kingdom Relations (May 2015). 2014 Annual Report of the State's Conduct of Internal Management, p. 52. The following website was consulted: <https://www.rijksoverheid.nl/documenten/rapporten/2015/05/01/jaarrapportage-bedrijfsvoering-rijk-2014>.

Ministry of the Interior and Kingdom Relations (August 2014). Labour Market Analysis Central Government; looking ahead to 2016 and 2020. The following website was consulted: <http://kennisopenbaarbestuur.nl/rapporten-publicaties/arbeidsmarktanalyse-rijk-een-voortuitblik-naar-2016-en-2020/>.

Morgan, J., Mitchell, P. (2015). Employment and the circular economy, Job creation in a more resource-efficient Britain. The following website was consulted: <http://www.wrap.org.uk/content/employment-and-circular-economy> (April 2016).

Motion tabled by the MPs Cegerek and Van Veldhoven (October 2015). The following website was consulted: <https://www.parlementairemonitor.nl/9353000/1/j9vvij5epmj1ey0/vjylcaobs2z7> (February 2016).

NNOF (2016). The following website were consulted: <http://www.ikinnoveer.be/nnof> and <https://www.youtube.com/watch?v=>.

Padding, T., Versteeg, G. (2015). REBus - Pilot: circular procurement Furniture ProRail Facilities Services. The following website was consulted: <https://www.pianoo.nl/document/11111/pilot-circulair-inkopen-kantoorinrichting-prorail-2013-2015> (January 2016).

Parliamentary Monitor (2009). The accrual accounting system for the Central Government; Report - Budget and Accountability in Balance. The following website was consulted: <https://www.parlementairemonitor.nl/9353000/1/j9vvij5epmj1ey0/vi3al7oytcwc> (April 2016).

Parliament & Politics, Budget System. The following website was consulted: <http://www.parlement.com/id/vh8lnhr-qzzz2/begrotingsstelsel> (April 2016).

The Hague Centre for Strategic Studies (HCSS) (2012). Towards a Raw Materials Strategy. Commissioned by the Ministry of Foreign Affairs.

TNO Report, Opportunities for a circular economy in the Netherlands. Commissioned by the Ministry of Infrastructure and the Environment (2013).

UNEP (2011). Decoupling natural resource use and environmental impacts from economic growth. UNEP & International Resource Panel. The following website was consulted: http://www.unep.org/resourcepanel/decoupling/files/pdf/decoupling_report_english.pdf (April 2016).

Vermeulen W. J. V., Witjes, S., Reike, D. (2014). Recommendation on a Framework for Impact Assessment for Circular Procurement. The following website was consulted: <http://research.economicboardutrecht.nl/onderzoeksbibliotheek/2014-advies-over-een-raamwerk-voor-impactmeting-voor-circulair-inkopen-uu> (March 2016).

Wijkman, A., Skånberg, K., (2015). The Circular Economy and Benefits for Society. The following website was consulted: <http://www.clubofrome.org/wp-content/uploads/2016/03/The-Circular-Economy-and-Benefits-for-Society.pdf> (April 2016).

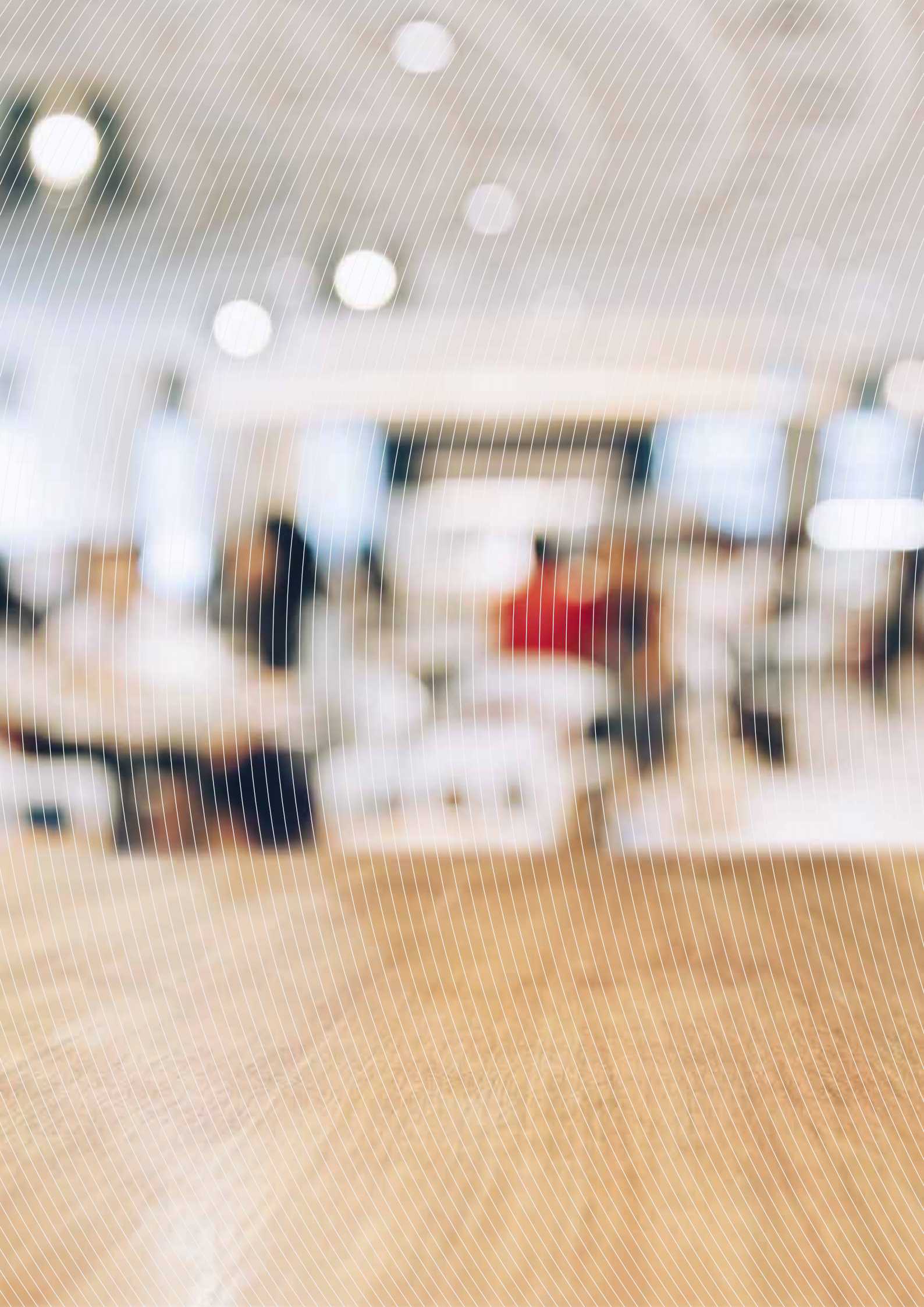
3 Step IT The circular economy: a natural driver for cost efficiency for all. The following website was consulted: <https://www.3stepit.com/uk/asset-management-2/the-circular-economy-a-natural-driver-of-cost-efficiency-for-all/> (April 2016).

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LIST OF ABBREVIATIONS

English	Dutch (including abbreviation)
Directorate-General for Public Works and Water Management	Rijkswaterstaat (RWS)
Central Government Marketplace	Rijksmarktplaats
The Directorate-General for Government Organisation	Directoraat-generaal Overheidsorganisatie (DGOO)
State Movable Property Service	Domeinen Roerende Zaken (DRZ)
Group Service Provider	Concern Dienstverlener (CDV)
Fact sheet Physical Working Environment	Fysieke Werkomgeving Rijk (FWR)-wijzer
State Catalogue	Rijkscatalogus
Central Government Real Estate Agency	Rijksvastgoedbedrijf (RVB)
Client Council	Klantenraad
Custodial Institutions Agency	Dienst Justitiele Inrichtingen (DJI)
Procurement Implementation Centre	Inkoop Uitvoerings Centrum (IUC)
Tax and Customs Administration	Belastingdienst (BD)
Facility Management Haaglanden	FM Haaglanden (FMH)
Ministry of Defence	Ministerie van Defensie (DEF)
Ministry of the Interior and Kingdom Relations	Ministerie van Binnenlandse Zaken en Koninkrijksrelaties (BZK)
Ministry of Infrastructure and the Environment	Ministerie van Infrastructuur en Milieu (IenM)
Dutch Public Procurement Expertise Centre	PIANOo
Interdepartmental Committee on Procurement and Tender	Interdepartementale commissie Inkopen en Aanbesteden (ICIA)
Interdepartmental Committee on Facilities and Housing Committee	Interdepartementale commissie Facilitair en Huisvesting (ICFH)
Interdepartmental Committee	Interdepartementale commissie (IC)
Department for Government Facilities, Housing and Procurement Policy	Directie Faciliteiten-, Huisvesting- en koopbeleid Rijk (FHIR)
National Consultation Committee on Facilities Management	Landelijk Facilitair Management Overleg (LFMO)



'When the perspective changes, everything changes.'

- T.M. Rau -

We would like to thank Sabien van der Leij and Marieke van Weerdhuizen for this interesting assignment.

