# Methodology for calculating Lives Improved

At Philips, we strive to make the world healthier and more sustainable through innovation. Our goal is to improve the lives of 3 billion people a year by 2025.

To guide our efforts and measure our progress, we take a two-dimensional approach – social and ecological – to improving people's lives.

Philips Group
Lives improved dimensions
2016
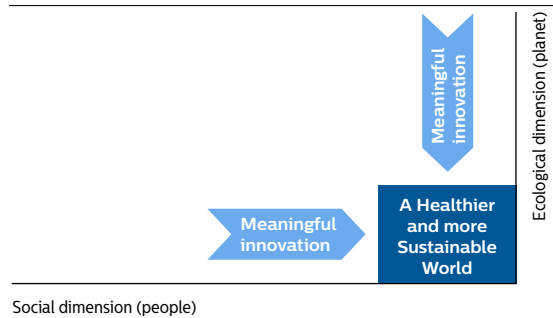
Solutions from our portfolio that directly support the curative ('care') or preventive ('well-being') side of people's health determine the contribution to the social dimension. This is also our contribution to the UN Sustainable Development Goal 3 ("to ensure healthy lives and promote well-being for all at all ages"). As healthy ecosystems are also needed for people to live a healthy life, the contribution to the ecological dimension is determined by means of our steadily growing Green solutions portfolio, such as our energy efficient products in Personal Health. This is our contribution to Sustainable Development Goal 12 ("to ensure sustainable consumption and production patterns").

We started the development of this methodology for calculating the number of lives improved with our contribution to the 'Care' side in the social dimension in 2010. With the renewal of our company vision in 2012, we have extended that approach with our 'Well-being solutions' and our 'Green solutions'.

This document describes the methodology and metrics used to calculate the number of lives improved by Philips, as well as the different data sources used. The

'Lives Improved' metric is part of the assurance assignment of EY. EY's assurance report can be found here: chapter 12.5 of the Annual Report 2016.

Philips Group
From solutions sold to lives improved
2016

1

Number of solutions sold
Determine the no. of solutions sold in the following categories:
· Green solutions
· Care solutions
· Well-being solutions

▼

2

Installed base of solutions
Determine the installed base per Green-, Care- or Well-being solution category based on solutions sold and average solution category lifetime

▼

3

Number of lives improved
Determine the no. of lives improved by multiplying the installed base with the identified no. of people touched by a Green-, Care- or Well-being solution [1]

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[1] Double-counts between various Philips Green-, Care- and Well-being solutions that touch the same person are eliminated

Methodology

To calculate how many lives we are improving, market intelligence and statistical data on the number of people touched by the products contributing to the social or ecological dimension over the lifetime of a product are multiplied by the number of those products delivered in a year. After elimination of double counts – multiple different product touches per individual are only counted once – the number of lives improved by our innovative solutions is calculated. It is assumed that product contacts are statistically uncorrelated, i.e. using a Philips Senseo does not significantly influence the likelihood also using a Philips LED lamp.

With this methodology we calculated that Philips improved 1.7 billion lives through our Green solutions portfolio, 0.9 billion through our 'Care' portfolio and 0.3 billion through our 'Well-being' portfolio in 2016. After

the elimination of double counts this results in 2.1 billion lives a year in 2016, compared to 1.6 billion in 2012, the baseline year.

Philips Group
Lives improved in billions
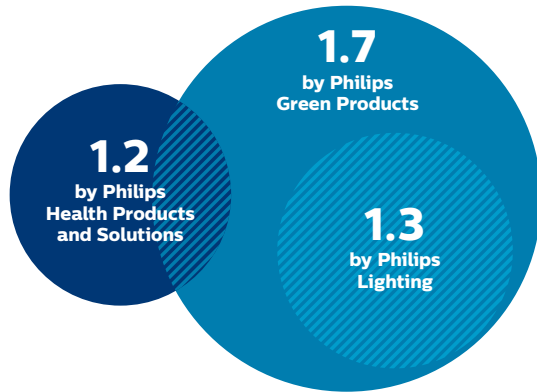
Total: 2.1 billion (double counts eliminated)

Double counts

Conceptual drawing, areas do not reflect actual proportions

In line with the discontinued operations presentation in the Group financial statements regarding the Lumileds and Automotive business, we have excluded this data from the consolidated Sustainability data if relevant.

Our baseline of 1.7 billion people a year, established in 2012, has been adjusted to 1.6 billion to reflect the impact of the exclusion of the Automotive and Lumileds businesses.

'Care' solutions

The starting point is the installed base of Philips Healthcare equipment from the following three businesses:

> ## Philips Healthcare three businesses
>
> **Imaging Systems**
> - Magnetic Resonance
> - Computed Tomography
> - Interventional X-Ray
> - Nuclear Medicine
> - Diagnostic X-Ray
> - Ultrasound
>
> **Patient monitoring**
> - High-end Monitoring
> - General Monitoring
> - Fetal Products
> - InVivo
> - ECG
>
> **Home Healthcare Solutions**
> - Lifeline
> - Respironics

Next, an adjustment factor is determined per modality in Imaging Systems. For example, Computed Tomography (CT) usage is first broken down into the following clinical segments: Oncology, Orthopedics, Vascular and Cardiac care. For each clinical segment, the number of touch-points per patient is determined to obtain a typical treatment in that segment. Furthermore, a distinction is made between 'inpatients' (hospitalized) and 'out-patients' (not hospitalized) to eliminate overlap between Imaging Systems and Patient Monitoring (assuming that in-patients are always touched by Patient Monitoring equipment). As a result, for example, 1,000 procedures using our CT equipment touch only 326 individual lives, and the adjustment factor is 326/1000. This detailed calculation is performed for all modalities.

For fetal monitoring, only the mother is included in the calculations, not the baby. To arrive at the total lives improved for the 'Care' category, the installed base is multiplied by the number of patients per day, the average occupancy rate (days/year), and the adjustment factor. For Patient Monitoring, the result is divided by the average length of stay (ALOS) to arrive at the total number of lives touched by our monitoring systems.

The results of these calculations are verified by marketing intelligence officers, product marketeers, clinical scientists in the different businesses and finally by the Director Sustainability Healthcare of Philips.

Metrics and data sources for the 'Care' category

The metrics and data sources we are tracking to complete the Lives Improved calculations are:

- Installed base – calculated based on data from financial systems and market share information. From our financial systems, only equipment that is known to be operational is included. This is equipment connected to our Remote Service Network, or for which there has been service activity in the past year.
- Adjustment factors – methodology explained above. To eliminate double counts within Imaging Systems and between Imaging Systems and Patient Monitoring, a model has been set up that calculates the number of individuals that are affected by a number of imaging procedures (see above), based on the professional judgment of healthcare specialists. It is assumed that only 'lives improved' of in-patients need to be corrected for double counts, as out-patients are assumed not to be treated by Patient Monitoring. To eliminate double counts, it is assumed that in-patients are always touched by Patient Monitoring equipment, whether at admission or during their stay. Philips' global market share is then used to eliminate the double counts. Lastly, an estimate is made per clinical area of how many scans

or touch-points are part of a typical treatment in this area. This is then used to further eliminate double counts within a modality.

- In-patient (hospitalized) versus out-patient treatments – based on expert opinion and on data from i_Supply for Magnetic Resonance.
- For some parameters (e.g. distribution over clinical segments) the professional judgment of healthcare specialists is used.
- Patients per day – data from Espicom and Netforum is used.
- Occupancy rate – data from Worldwide Medical Market Factbook 2015 is used.
- Average length of stay - ALOS in a hospital plays a role in some parts of the Lives Improved model. The data used is based on Worldwide Medical Market Factbook 2015. A global weighted average is calculated based on Worldwide Medical Market Factbook 2015 data and number of hospital admissions per country. Data with respect to ALOS and admissions by country varies, with the latest available data being for 2015.

'Well-being' solutions

In the table below some example well-being solutions categories are given:

Philips well-being product categories

Food
- Home cookers
- Blenders
- Juicers
- Grinders
- Air fryers

Physical and mental health
- Electric toothbrushes
- Airfloss
- Breast pumps
- Baby bottles
- Light therapy

Healthy home environment
- Air purification
- Water purification

The starting point here is the sales in units of designated well-being products. These are all consumer products and services that enable people to live healthier lives by providing them with the tools to make healthier choices:

- to prepare food
- to care for their physical and mental health
- to create a healthy home environment

Products are only included during the estimated lifetime of that product. So, a product sold in 2014, with a lifetime of three years, will be included in 2014, 2015 and 2016. Next, the Lives Improved per product are calculated using an estimate of lives touched per product. For example, an electric toothbrush only enables the improvement of one life, whereas a HomeCooker enables improvement of the lives of an average family size. Next, in order to avoid double counts (a person owning a Sonicare toothbrush could also own a HomeCooker, but should only be counted once), a statistical elimination is performed (refer to the Appendix). First, the statistical elimination is performed within the 'Well-being' and 'Green' categories, and then also across the three categories that contribute to 'Lives Improved' by Philips.

Products from acquisitions are only included as of the year after the acquisition and subject to the acquisition agenda.

'Green' solutions

The methodology used to calculate lives improved for 'Well-being' products is also used for Green Products. Green Products are developed and produced by all businesses in the sectors Healthcare, Lighting and Consumer Lifestyle. Green Products are developed with reference to the Philips Green Focal Areas: Energy efficiency, Packaging, Hazardous substances, Weight, Recycling and disposal, and Lifetime reliability.

Green solutions criteria

Green solutions need to prove leadership in at least one Green Focal Area compared to the industry standard, which is defined by a sector-specific peer group. This is done either by outperforming reference products (which can be a competitor or predecessor product in the particular product family) by at least 10%, outperforming product-specific eco-requirements, or by being awarded a recognized eco-performance label.

Because of their different product portfolios, sectors have specified additional criteria for Green solutions, including product specific minimum requirements where relevant.

Products from acquisitions are only included as of the year after the acquisition and subject to the acquisition agenda. Professional Lighting Solutions is an exception to this rule as it was not possible to exclude the products sold from this business.

Metrics and data sources (for the 'Well-being' and 'Green' solutions)

The metrics and data sources we are tracking to complete the Lives Improved calculations are:

- Sales in quantities from financial systems (to provide more insightful information we changed the sales data from "country of sales" to "country of designation" resulting in changes in reported data per market)

- Public sources, where available, to determine, for example, number of people in a market and Gross Domestic Product (e.g. CIA world fact book, IMF, OECD reports, The World Bank)
- Product lifetime and lives improved per product estimates from Philips Innovation & Development and marketing intelligence specialists
- Market share information from Philips marketing intelligence specialists
- Statistical elimination of cross-product category double counts based on Set Theory (refer to the Appendix)

Scope
Solutions that are **out of scope** are:

Care solutions
- IntelliVue telemetry devices and HeartStart (AED) devices
- PACS systems and central processing servers

Well-being solutions
- All solutions that do not fulfill the 'Well-being' criteria

Green solutions
- All Philips solutions that do not fulfill the 'Green' criteria

Next steps
We used opinions from Philips experts and estimates for some parts of the Lives Improved calculations. There is therefore an inherent uncertainty in our calculations. The figures reported are Philips' best possible estimate. The Lives Improved model will be used in the Philips organization to manage our progress towards the target of 3 billion lives improved in 2025. Therefore, we expect further refinements over the coming period. As we gain new insights, we may enhance the methodology in the future.

Appendix
In the Lives Improved model, product categories can be represented by a number of 'bubbles' that cover the population in a given market. In the graphic representation to the left we have assumed a market size of 18 people, of whom six have a Philips LED Lighting Green Product, five have a Philips Senseo Viva Café Eco, and one person has had an MRI scan in a Philips MRI machine.

Philips Group
Lives improved in billions
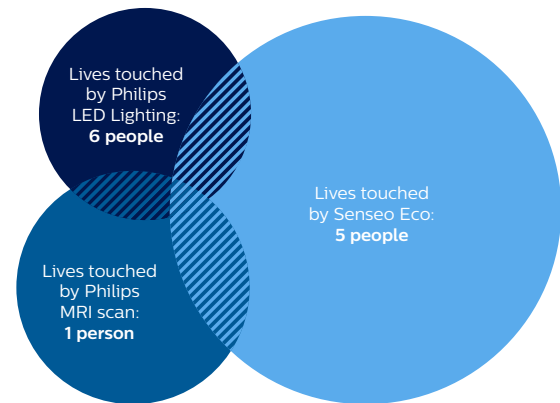
Total: lives touched: 10
(excluding double count between multiple products)

Double count: 2
People touched by multiple products

▨ Double counts
Market size: 18 people – (illustrative example)

As the figure illustrates, there is a chance that not all lives touched by Philips products are unique lives; one person can have a Philips Green LED lamp and a Philips Senseo Viva Café Eco. Therefore the total Lives Improved in the example above is given by the union of the three bubbles, or:

Lives Improved
= LED ∪ Senseo ∪ MRI
= Total market – (LED ∪ Senseo ∪ MRI)^c

By assuming the product overlaps are statistically uncorrelated, i.e. using a Philips Senseo Viva Café Eco does not significantly influence the likelihood of also using Philips Green LED, we can use the following:

$(A ∪ B)^c = A^c ∩ B^c$ (De Morgan's laws) and,
$P(A ∩ B) = P(A) * P(B)$ (Probability theory)

This gives us:

Lives Improved
= Total market * $[1-(P(LED^c) * P(Senseo^c) * P(MRI^c))]$
= Total market * $[1-([1-P(LED)] * [1-P(Senseo)] * [1-P(MRI)])]$
= 18 * $[1-([1-6/18] * [1-5/18] * [1-1/18])]$
= 18 * $[1-(0.667 * 0,722 * 0,944)]$
= 18 * $[1-0.455]$
= 9.81