



Corporate Responsibility

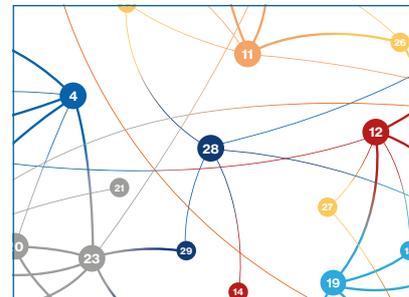
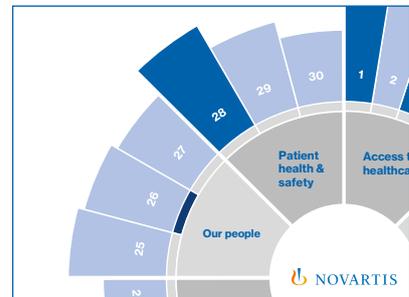
2017 Corporate Responsibility Materiality Assessment Results Report

Identifying what matters most

 NOVARTIS

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Letter from Patrice Matchaba



As we work towards discovering and developing new medicines to improve and extend people's lives, we impact not only patients, healthcare providers, governments, investors, employees but also the society we live in at large. But in a world with so many complex needs, it can be hard to know where to start. We need to focus on the right issues, in order to make a real difference.

This is also true in corporate responsibility (CR), where the array of topics facing a company such as ours is broad – so deciding where to focus requires a better understanding of what our key stakeholders believe we should be doing and how.

That's why, in 2006, we implemented our first CR materiality assessment (MA) to help define the corporate responsibility topics that matter to our stakeholders and their expectations. We wanted to find out their views on the economic, ethical, social, environmental and governance topics affecting Novartis, and how we could best address their concerns. We conducted our third full assessment in 2017. You can read more about the methodology and the results in this report.

To me, the results are enlightening. Overall, there is alignment between external and internal stakeholders, prioritizing four issue clusters as CR material:

- access to healthcare,
- innovation,
- patient health and safety,
- and ethical business practices.

It's important to note that none of the clusters or topics were regarded as unimportant – but not all of them were deemed CR material.

We plan to use the results to continue to steer both our CR strategy and reporting efforts. For example, to help ensure that our stakeholders are kept informed about our progress and challenges in the areas they identified as having most impact, we aim to use the CR material clusters to frame our CR reporting and disclosure efforts moving forward.

We also plan to use the analysis to shape our vision and inform our actions, track topics of concern, prioritize our corporate responsibility activities, and establish meaningful metrics for evaluating our performance.

Finding sustainable ways to reach more patients around the world is part of our company mission. And how we do this is just as important. We believe that our CR materiality assessment is a useful and valuable tool to help ensure we are on the right track and that we are structured in our approach.

Patrice Matchaba

Global Head of Corporate Responsibility

About this report

This report summarizes the approach and results of our 2017 corporate responsibility (CR) materiality assessment. The assessment plays an important role in strengthening the integration of CR in our core business. We have invested significant resources and time into the research and analysis underpinning this process to ensure that the assessment is a valuable management tool for the business.

Following best practice guidelines published by international standard setters – including Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), International Integrated Reporting Council (IIRC) and others – we conducted desk research to identify a set of important CR topics impacting our business, and prioritized the topics by surveying an inclusive list of internal and external stakeholders. The survey results from the different stakeholders formed the quantitative basis for a statistical analysis, which included a correlation analysis that shows how topics are connected. In addition to the quantitative analysis, we gathered qualitative data captured through free text fields in the surveys, and we conducted more than 60 one-on-one interviews. This qualitative analysis is vital to interpret the quantitative results as it provides indications of underlying trends and different perspectives stakeholder groups have on an issue.

Our research identified four material issue clusters, or groups of closely related topics. 14 topics were identified as “priority,” which means that we plan to conduct a thorough evaluation of our activities in these areas and help ensure that necessary steps will be taken to either maintain or improve our performance in these areas.

The results also showed that none of the 30 CR topics identified through our desk research are perceived as being unimportant. While the scope of our work in CR will remain broad, given its complex and diverse nature, we will focus on the issue clusters deemed most material to our company.

This report details the results on the ranking of issue clusters, topics and the 14 priority topics in an aggregated form. Additional data, including information about how our performance is perceived by different stakeholder groups, will be used to initiate and continue discussions with the relevant functions within Novartis and form the basis of subsequent activities. Beyond that, this report will serve as a basis for additional research activities, including a scenario analysis and ongoing stakeholder engagement.

Our performance in the CR material clusters is detailed in our 2017 corporate responsibility report¹.

¹ <https://www.novartis.com/sites/www.novartis.com/files/novartis-cr-performance-report-2017.pdf>

Executive summary

To further inform our corporate responsibility (CR) strategy and to better understand the needs and expectations of internal and external stakeholders, we conducted a third full materiality assessment (MA) over the course of 2017. We believe the results will further facilitate the implementation of our CR strategy across the company's divisions and business units and support the allocation of resources to address the most material topics. Understanding the CR topics that are most important for Novartis also allows us to prioritize and structure our CR reporting to external stakeholders.

The previous MA (conducted in 2006 and 2013) served as a starting point for this most recent full assessment, which was conducted in 2017. We refined and complemented the 2013 methodology with additional project steps (e.g. scenario analysis) in order to further enhance the value that the MA will bring for the strategy process at Novartis. The list of topics identified in the 2013 analysis and refreshed in 2015 served as a basis for desk research with both internal and external sources. We identified more than 100 topics that were relevant to Novartis and its stakeholders. We then reviewed all topics and consolidated the most important ones. As a result, we identified 30 topics in eight issue clusters, which were then ranked by internal and external stakeholders based on impact on and performance of Novartis. To complement our assessment and support interpretation of the quantitative results, we also surveyed and interviewed key internal and external stakeholders.

At the issue cluster level, stakeholders indicated the following four clusters as most material:

- #1. Access to Healthcare**
- #2. Patient Health & Safety**
- #3. Ethical Business Practices**
- #4. Innovation**

Our analysis showed that all 30 topics were of some importance to stakeholders; no topic received a lower average score than 3 on a scale 1 (low) to 4 (high). Using adequate statistical selection criteria, we identified 14 of these topics that Novartis plans to prioritize in the years to come:

- Business model innovation
- Drug resistance
- Ethical & compliant behavior
- Financial health & performance
- Health system strengthening
- Innovative technologies
- Intellectual property
- Pharmaceuticals in the environment
- Pharmacovigilance, safety profile and quality of drugs
- Pollution, waste & effluents
- Pricing
- Recruitment & retention of employees
- Sustainable use of resources
- Transparency

Moving forward, the insights from the 2017 MA will serve as the basis for discussions and workshops with key internal stakeholders to identify gaps and opportunities, and to further align our activities with societal expectations, business needs and market developments.

By conducting a scenario analysis in spring 2018, we intend to add a dimension of strategic foresight to future-proof the MA methodology. We selected the topic of "respect for human rights" as the pilot for the scenario analysis approach. Further scenario analyses for other topics will be evaluated based on a review of the outcomes generated by the pilot.

In the future, we plan to complement our global MA by assessments conducted on a country level. These local assessments will help us identify and understand regional differences, and will help country organizations to define strategic areas of focus and integrate CR into their business in line with local stakeholder expectations.

To ensure consistency and to support local colleagues, we developed a country toolkit featuring important guidelines, best practices and tips for conducting a MA on a local level. The results of a first local MA based on this toolkit are expected to be published in 2018.

We will keep external stakeholders informed on our progress over time related to this MA and will further engage, where relevant.

Background

Corporate responsibility at Novartis

At Novartis, our mission is to discover new ways to improve and extend people's lives. We use science-based innovation to address some of society's biggest healthcare challenges. We discover and develop breakthrough treatments and find new ways to deliver them to as many people as possible. We also aim to provide a shareholder return that rewards those who invest their money, time and ideas in our company. Our vision is to be a trusted leader in changing the practice of medicine.

Our corporate responsibility (CR) strategy fundamentally supports this company mission and vision, with a focus on expanding access to healthcare and doing business responsibly. The CR strategy was endorsed by the Board of Directors and the

Executive Committee of Novartis (ECN) in 2012. The Novartis CR function is responsible for developing and implementing the CR strategy of Novartis together with the respective functions and businesses. The CR function also supports the organization as a strategic advisor on topics that are at the intersection of the Novartis business and society.

This includes identifying and analyzing important topics that impact our business and our key stakeholders; developing, maintaining and supporting the implementation of the CR strategy; and supporting the respective functions to manage these topics in order to minimize the negative and maximize the positive impact on our business and society².

Why a CR materiality assessment

We recognize that our activities – and the way we carry them out – have impacts that reach well beyond our financial performance. In order to remain successful in the long term, we need to engage in – sometimes controversial – societal discourse and find ways to align our broader business performance and both our positive and negative societal impact with the expectations of our shareholders, our stakeholders and society at large. To achieve this, a thorough and deep understanding of the CR topics that matter most to these groups is essential. Understanding their views on the economic, ethical, social, environmental and governance topics affecting Novartis will enable us to better address their concerns, exchange constructively on dilemmas and, in the end, better manage our business.

This requires that we also understand the correlations between different topics and that we define a number of scenarios for which we want Novartis to be prepared. This type of materiality assessment (MA) strengthens the dialogue with key stakeholders and helps to systematically identify and drive understanding on CR topics that affect Novartis and our stakeholders today and in the future.

We believe that a MA done in the right way, can be used as a strategic management tool, not only for the CR department but for all departments dealing with key global topics. By systematically working together with key internal and external stakeholders to identify and define relevant CR topics and gauge their perspectives on these, we collect valuable qualitative and quantitative insights. By also including stakeholders we

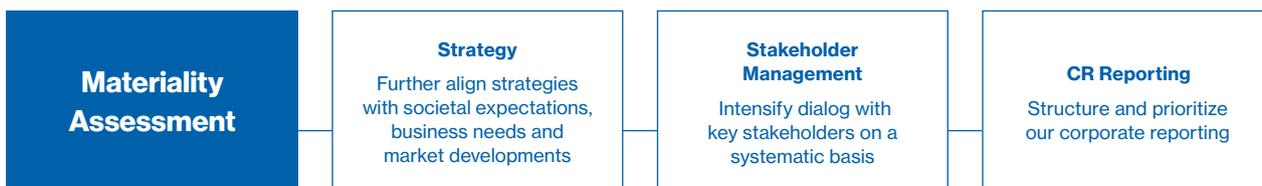
are not in regular contact with and addressing topics independent from ongoing activities, these consultations provide a neutral platform to openly share opinions and expectations. These rich insights can help us initiate a very valuable discourse in the organization that can lead to a better understanding of how topics will impact us, either directly or indirectly. Past assessments have also shown that the process helps us build stronger and lasting relationships with key stakeholders, which we consistently use to collect input for strategic decisions.

The 2017 MA has been specifically developed with three sets of objectives in mind:

- 1) Informing our strategy
 - a) For the Corporate Responsibility team
 - adjust commitments, targets, resource allocation of CR activities
 - understand future scenarios and be prepared
 - b) For our business colleagues, provide information on
 - enablers and obstacles
 - changing demands and expectations
 - performance and perception gaps
 - c) For strategic integration
 - strengthen CR thinking across Novartis
 - integration of MA insights and CR strategy in corporate strategy

² Novartis has published a number of positions that guide the behavior of the organization and all associates. <https://www.novartis.com/our-company/corporate-responsibility/positions>

- 2) Strengthening stakeholder engagement
 - a) Understand differences and similarities between Novartis and stakeholders
 - b) Understand interrelations among stakeholders
 - c) Strengthen and maintain stakeholder engagement
 - d) Manage expectations
- 3) Informing our CR reporting
 - a) Enhance robustness of our content and procedures
 - b) Strengthen proactive reporting
 - c) Prioritize and structure reporting
 - d) Inform exploratory activities related to integrated reporting



Objectives of our CR materiality assessment

The 2017 MA has been developed with the clear ambition that it will be used by business colleagues as a management tool to inform strategic choices and operational decision making. To achieve this objective, we needed to ensure that the MA will produce insights beyond the usual list of priority topics. Therefore, we complemented our MA process with:

- a) Additional one-on-one interviews, e.g. with internal topic experts to better understand risks and opportunities (cost, income and reputation) related to CR topics
- b) Comprehensive statistical analysis including correlation and factor analysis
- c) Scenario analysis (pilot) to future-proof the methodology and to strengthen the conclusions drawn from the results

How we define CR materiality

CR Materiality Definition: Social, environmental or economic issues are being considered to be material for Novartis if they have a substantial likelihood to influence the judgment and decisions of key stakeholder groups and a significant impact on Novartis performance and business overall.

In the area of financial reporting, materiality is a long-standing fundamental principle of disclosure that applies for publicly-listed companies in certain countries. It recognizes that some information is important to investors in making investment decisions. According to the U.S. Supreme Court, under US law, information is material if there is “a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the ‘total mix’ of information made available.” When information meets that standard, disclosure obligations may apply.

Separately, in the area of Corporate Responsibility, international sustainability, ESG or CR standard setters such as the Sustainable Accounting Standards Board (SASB), the Global Reporting Initiative (GRI), the International Integrated Reporting Council (IIRC), AccountAbility, the Investor Responsibility Research Center

Institute, and others have taken on the challenge to encourage public companies to consider environmental, social and governance (ESG) matters to be material, and to make additional disclosures in these areas.

In addition to financial reporting, companies such as Novartis have begun to conduct holistic assessments of expectations and needs (current and in the future) of all key stakeholder groups of an organization including employees, nongovernmental organizations, academia, healthcare providers, governmental and economic stakeholders, etc., in order to assist the companies in determining how to prioritize their CR activities.

Novartis conducted its first such CR materiality assessment in 2006, and another in 2013. With this analysis we are commencing what we plan to be a regular cycle with full assessments every four years and a review in between.

In conducting our 2017 materiality assessment, we updated our definition of CR materiality in reference to discussions driven by key standard setters who see a growing convergence of the different concepts of materiality³.

³ Our former definition can be found in our 2013 MA Results Report. <https://tinyurl.com/yc7jalc2>

Our approach to CR materiality

A systematic approach to CR materiality enables Novartis to:

- Assess whether our strategic focus is still relevant to the needs and expectations of internal and external stakeholders
- Effectively drive the implementation of the CR strategy in the overall Novartis business strategy and operations
- Measure whether the changes we implement are having an effect
- Respond to stakeholder expectations
- Optimally allocate resources to material issues

Our materiality cycle

At Novartis, we aim to conduct a full MA, including surveys and interviews of internal and external stakeholders, every four years. This allows enough time for topics to evolve and gives us an adequate period of time over which to implement actions based on the identified results.

In the middle of each cycle, we conduct a review in the form of a “pulse check”, based on an external stakeholder survey, to capture any significant changes or emerging topics.

Following the last full MA in 2013, we formed working groups for the top three issue clusters. All working groups identified opportunities and brought about concrete outcomes. For example, the working group on Access to Healthcare established a new governance structure to handle related activities. Other outcomes included:

- A new, integrated process to annually review opportunities in the area of adaptive R&D
- Improved transparency on integrity and compliance activities in our external communication efforts
- Strengthened focus on values and behaviors in our incentive systems, especially for our sales force
- Considerable input into the development of the Novartis access-to-medicines strategic framework

As a result of the review in 2015, the following new topics emerged:

- Non-communicable diseases
- Corporate tax
- Youth unemployment
- Non-financial disclosure



CR materiality cycle

Our methodology

For the 2017 MA we closely followed our standard methodology defined in 2013, which was recognized as a best practice by CR standard setters (e.g. by Dow Jones Sustainability Index and the CR Reporting Awards). We conducted online surveys among internal and external stakeholders, followed by interviews with selected internal and external opinion leaders. We then thoroughly analyzed the quantitative and qualitative data. As a result of the stakeholder feedback, we fine-tuned the standard methodology. We shortened the questionnaire, and we updated and consolidated the list of topics, reflecting the developments in the ecosystem and stakeholder expectations. The topics were re-framed, decreasing from a total of 45 to 30, while ensuring an even greater breadth of topics (existing and new) are covered.

Key changes include:

- Inclusion of a new cluster, “Economic Sustainability”
- Revision and subsequent broadening of the scope of existing issue clusters, e.g., Innovation (formerly R&D) now includes topics such as Business Model Innovation
- Renaming clusters to be more intuitive for stakeholders, e.g., Product Quality was renamed Patient Health and Safety

These changes can impact the comparability of results from the 2017 and 2013 assessments, particularly at the issue cluster level.

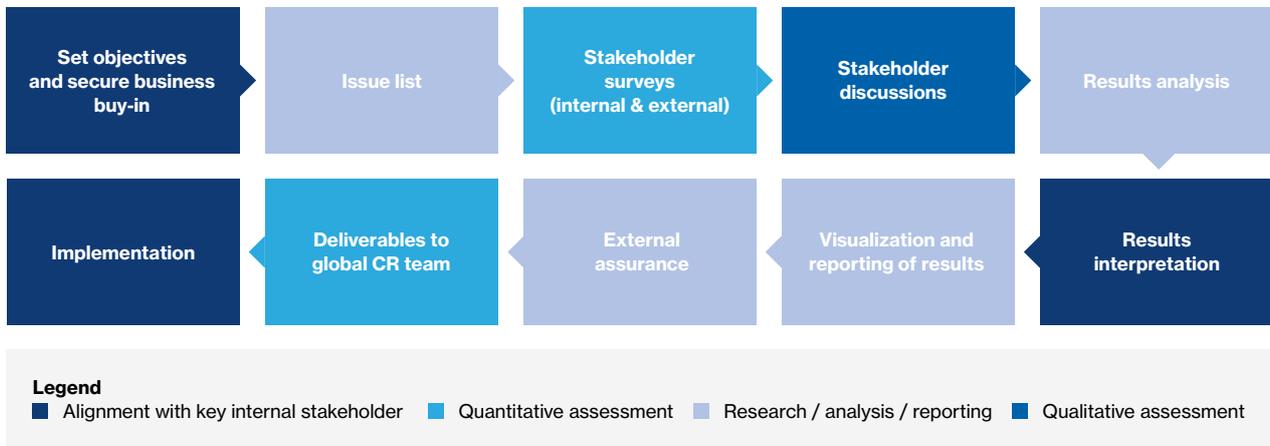
To enhance the value of the MA as a management tool, we further enhanced the methodology to deliver deeper insights at the topic level and added a new dimension to bring strategic foresight to the process.

- We asked internal experts to rank the topics from a risk and opportunity perspective across the dimensions of income, costs and reputation, adapting the methodology used by our Enterprise Risk Management group to strengthen the understanding of the individual topics
- We completed a correlation analysis to understand how the topics are interconnected and inter-linked
- We are piloting a scenario analysis for individual topics to go beyond the retrospective and static understanding of topics

“Novartis takes an advanced and evidence-based approach to uncovering its most material topics. Surveying over 1000 Novartis associates, and almost 200 external stakeholders brings the company valuable strategic insights. Through its materiality cycle, Novartis thinks deeply and carefully about the expectations of its stakeholders, and how to respond most effectively. It also enables the company to focus on the areas that really matter to the business and provides a firm foundation for its success.”

Rob Cameron, Chief Executive, SustainAbility

Our process



[Project overview - materiality assessment](#)

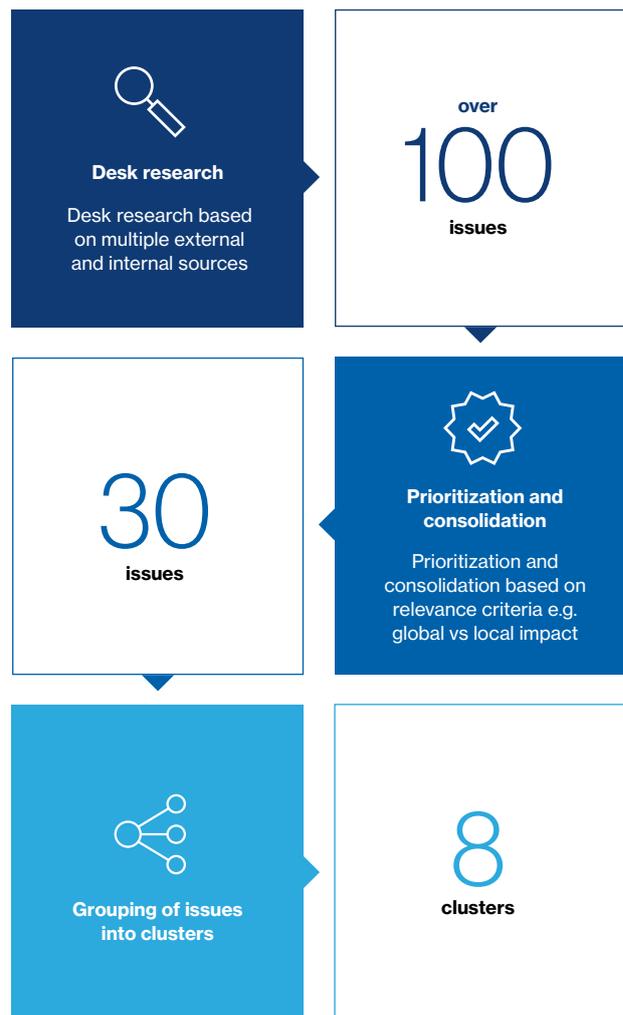
Preparation

At the end of 2016, the CR team engaged with key internal stakeholders to secure their agreement and align with internal processes.

We then conducted desk research to identify new CR material topics. Starting with the 2013 topic list, we evaluated a range of internal and external data sources including analyst reports, media articles and stakeholder feedback, and identified more than 100 topics. Through a systematic review, these were then consolidated into 30 topics grouped into eight issue clusters.

Internal phase

We surveyed over 1,000 associates from middle and top management via an online questionnaire. They ranked the issue clusters on their importance as well as the topics (those most relevant to their work) with regards to their impact on and performance of Novartis. Following the survey, we interviewed 30 senior executives from all Novartis divisions and numerous functions to determine the underlying rationale behind their individual rankings. We consider them internal topic experts and thus asked them to identify relevant risks and opportunities. In a separate survey, these experts ranked the topics on risks and opportunities across three dimensions: cost, income and reputation.



How we identified the topics and clusters

External phase

We invited key stakeholders from relevant groups to participate in the same survey and interview process as associates. Stakeholders were categorized as follows:

- Academia and scientific community
- Financial market participants
- Governments, and regulatory, political and economic stakeholders
- Healthcare providers / industry
- Nongovernmental organizations (NGOs) / nonprofit organizations (NPOs) and charitable organizations
- Other companies

To ensure a representative and inclusive list of external stakeholders, we consulted with business colleagues and external CR experts with in-depth knowledge of our industry.

We received 189 survey responses, all from members of organizations with global operations. We received enough responses from all stakeholder categories to fully assess them in the results analysis.

We then conducted 30 one-on-one interviews with external stakeholders to better understand the rationale for their survey responses. Through the external interviews we also gained deeper insight into their ambitions, expectations and priorities for the future performance of Novartis.

Analysis and interpretation of results

Following the completion of the survey and interview phases in August 2017, the quantitative results were used to identify the most material topics overall, the most material topics according to each stakeholder category, and the priority topics. Using statistical analysis, we tested the significance of our results and carried out the correlation analysis to find out how topics are linked. Using a set of statistical selection criteria, we identified 14 topics that Novartis should prioritize in the midterm (see section “Priority topics” for detailed selection criteria).

The in-depth qualitative feedback will support the interpretation of the quantitative results and form the basis for the final gap and opportunity analysis to identify necessary responses.

The results were presented to internal CR governance bodies, including the CR Board and CR Leadership Team at the end of 2017.

Stakeholders	Surveyed	Interviewed
Academia and Scientific Community	25	2
Financial Market Participants	32	7
Governments, and Regulatory, Political and Economic Stakeholders	6	0
Healthcare Providers / Industry	42	9
NGOs, NPOs and Charitable Organizations	40	8
Other Companies	44	4

Overview of external stakeholder groups involved

Scenario analysis

While the MA provides comprehensive insights about the impact a topic has today, foresight into how these topics will impact Novartis in the future is limited. Hence, we decided to conduct a scenario analysis in order to further strengthen the conclusions of the assessment by adding an element of strategic foresight to the current methodology.

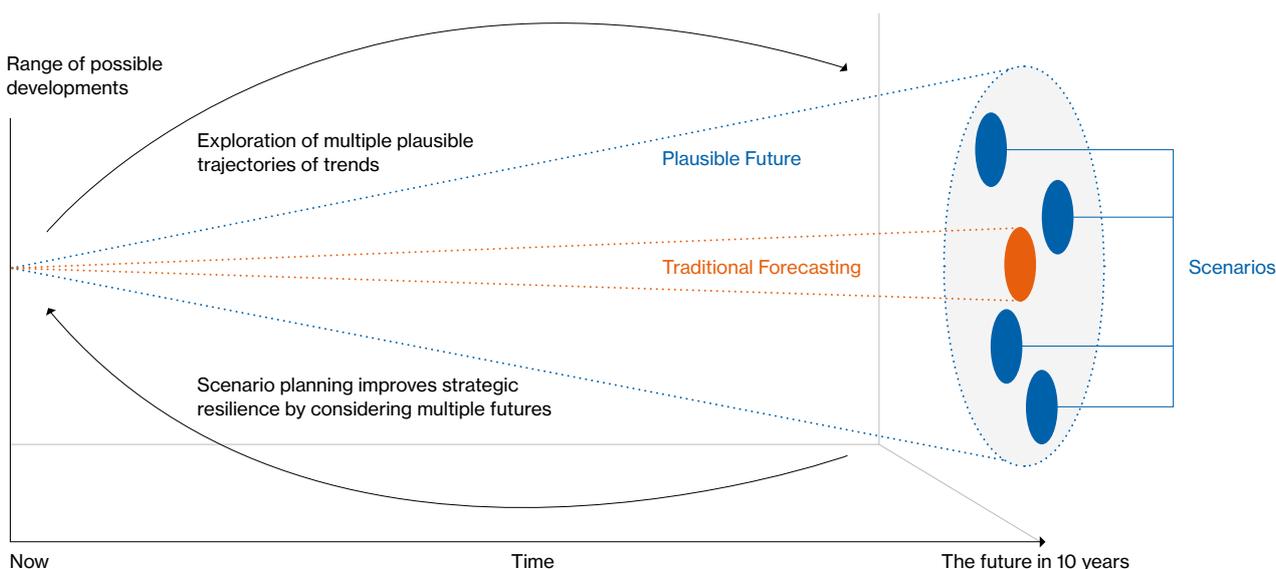
As part of the analysis we carried out a desk research to fully understand the topic and its drivers, interviewed internal stakeholders and conducted a workshop on the results to:

- Develop a shared understanding among associates of the potential long term financial implications of CR topics and ways to prepare for them;
- Explore emerging challenges and opportunities for Novartis;
- Consider how the topic may develop over time with the aim of reducing risk;
- Identify strategic options over the short, medium, and long term for the most dynamic and unpredictable factors impacting Novartis;
- Improve capacity of Novartis to navigate rapid change, complexity, and ambiguity;
- Enhance future thinking of the Novartis management teams.

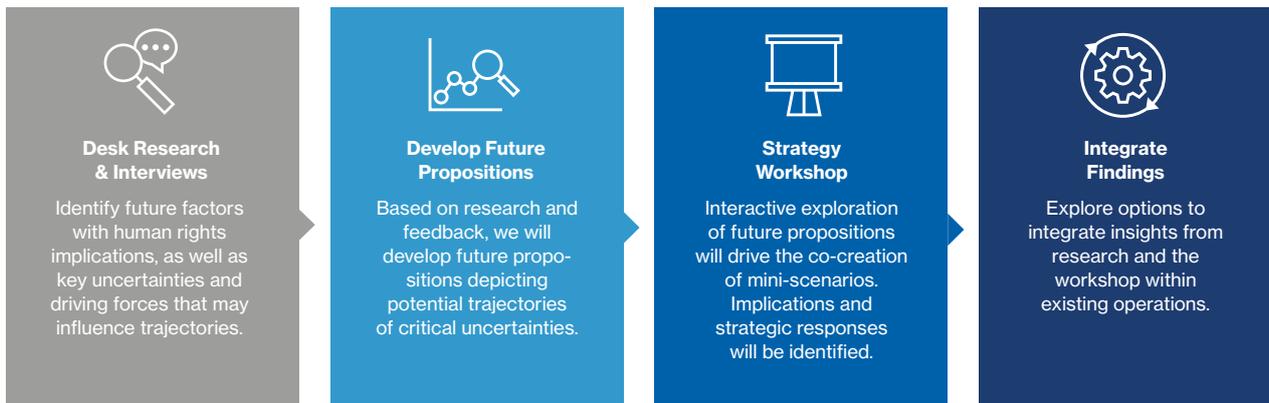
We selected the topic “respect for human rights” as the pilot scenario to analyze. We plan to conduct additional scenario analyses for other material topics if the insights generated by the pilot justify the invested time and effort.

“Disruptive developments in technology, geopolitics, and business models are transforming the landscape for healthcare in rapid and unpredictable ways. Businesses that rely solely on current forecasts to navigate this turbulent future are at risk of being blindsided. By using scenario analysis, Novartis is not only innovating beyond the traditional materiality assessment, but preparing itself for entirely new risks and opportunities.”

Jacob Park, Director Sustainable Futures Lab, BSR



Traditional forecasting vs. scenario analysis



The scenario analysis process

Correlation analysis

Our previous assessment looked at each topic separately. As many of these topics are in fact highly interlinked and connected, we wanted to understand how they correlate. We therefore used the quantitative results to conduct a correlation analysis in order to

identify the strength of the statistical correlation from one topic to another. As we move forward, we intend to further analyze these correlations to better understand potential levers and how these correlations can further inform our activities.

Country toolkit

This MA is concerned with global topics and stakeholders who deal with topics on a global level. The challenges our stakeholders are facing and the way Novartis is perceived in the context of these topics may vary on a country or functional level.

holder expectations. In addition, countries and functions will profit from various elements of the materiality assessments, e.g. a systematic CR stakeholder mapping which has not been conducted in each country yet.

Novartis therefore encourages country organizations, as well as functions, to conduct local or functional materiality assessments. These assessments will help us identify and understand regional differences and help country organizations define strategic areas of focus and integrate CR into their business in line with local stake-

To ensure consistency and to support local CR teams, we developed a country toolkit, featuring important guidelines and best practices for conducting a local materiality assessment. Country assessments will be driven by the country organizations themselves, but supported by the global CR team. We expect the first local MA guided by this toolkit to be published in 2018.

External support

To ensure that our approach is state of the art and to enhance and future-proof our MA methodology, Novartis collaborated with the following external advisors:



- 2) SustainAbility
 - Project management
 - Stakeholder engagement



- 1) R.A.T.E. GmbH
 - Methodology refinement and process excellence
 - Survey design and statistical data analysis
 - Reporting and interpretation



- 3) BSR
 - Scenario analysis

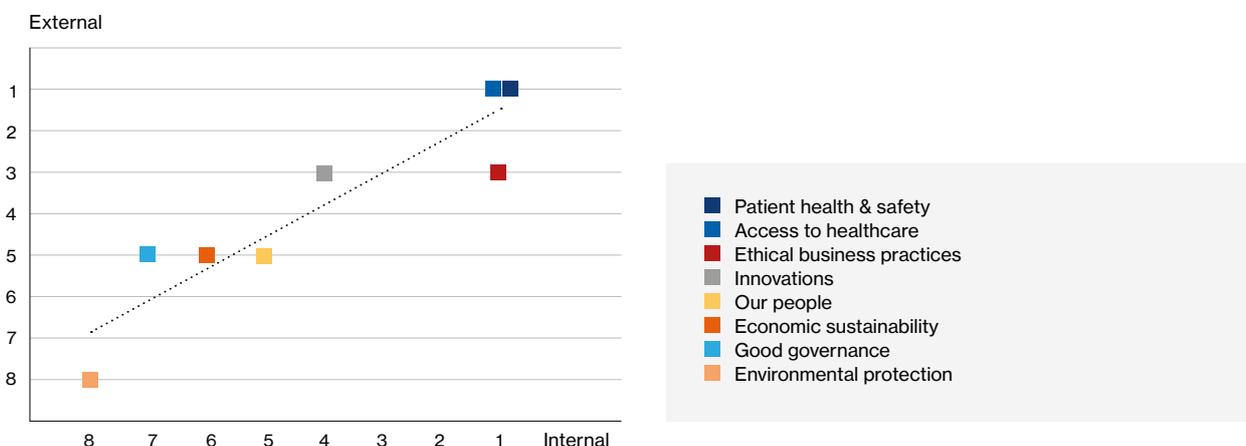
Results: CR materiality ranking

Topic clusters

Through our internal and external surveys, stakeholders ranked the issue clusters based on their impact on performance and business of Novartis overall. Stakeholders identified the clusters Access to Healthcare, Patient Health and Safety, Ethical Business Practices, and Innovation as being most important.

are again among the most important clusters in 2017. Results show no differences between internal and external stakeholders for the two most important issue clusters (“Access to Healthcare” and “Patient Health & Safety”) and the least important cluster (Environmental Protection). Minor differences exist in all other issue clusters.

The three most important clusters in 2013 (Access to Healthcare, R&D, and Ethical Business Practices)



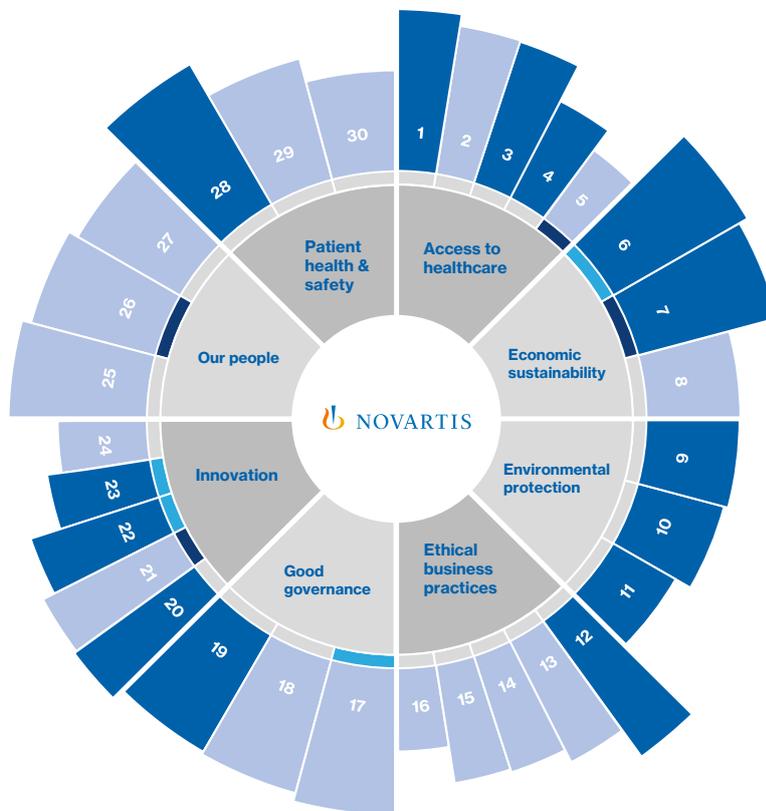
Ranking of material topic clusters - external vs. internal stakeholders

Rank

Rank	Topic Cluster	Description
#1	Access To Healthcare	How we enhance access to healthcare around the world
#1	Patient Health & Safety	How we ensure that adhere to the highest quality standards and put patients first
#3	Ethical Business Practices	How we promote ethical behavior
#4	Innovation	How we develop innovative products and leverage new business opportunities
#5	Our People	How we treat our employees around the world
#6	Economic Sustainability	How we secure financial sustainability of our organization
#7	Good Governance	How we build our governance structures and communicate with stakeholders
#8	Environmental Protection	How we use resources and protect the environment

Ranking of material topic clusters

CR materiality matrix



CR materiality assessment results polar chart

How to read the chart

Outer circle
■ Priority topics

Middle circle
■ External stakeholders perceive as more important
■ Internal stakeholders perceive as more important
■ No significant difference in perception

Inner circle
■ Material issue clusters

Access to healthcare

- 1 Pricing
- 2 Availability of medicines
- 3 Intellectual property
- 4 Health system strengthening
- 5 Patient assistance programs

Economic sustainability

- 6 Financial health & performance
- 7 Recruitment & retention of employees
- 8 Fair contribution to society

Environmental protection

- 9 Pharmaceuticals in the environment
- 10 Pollution, waste & effluents
- 11 Sustainable use of resources

Ethical business practices

- 12 Ethical & compliant behavior
- 13 Respect for human rights
- 14 Responsible supply chain management
- 15 Responsible use of new technologies
- 16 Animal testing

Good governance

- 17 Corporate governance
- 18 Data privacy and security
- 19 Transparency

Innovation

- 20 Innovative technologies
- 21 R&D for unmet medical needs
- 22 Business model innovation
- 23 Drug resistance
- 24 R&D for neglected diseases

Our people

- 25 Health & safety
- 26 Fair working conditions
- 27 Diversity & inclusion

Patient health & safety

- 28 Pharmacovigilance, safety profile & quality of drugs
- 29 Counterfeit medicines
- 30 Health education & prevention

The inner circle reflects the issue clusters. The top four CR material clusters are highlighted in bold. The middle circle indicates topics with significant differences in perception between internal and external stakeholders. The outer circle represents the 30 individual topics. The

relative importance of a topic is indicated by the height of the column, not its width. The cluster ranking (inner circle) is based on a separate topic cluster ranking question; it is not derived from a calculation of the individual impact rankings of topic-specific questions.



	Rank	CR topics	Strategic pillar	Stakeholder groups with highest impact rating
Access To Healthcare	#2	1 Pricing	Expanding access to healthcare	Governments, and Regulatory, Political and Economic Stakeholders
	#5	2 Availability of medicines	Expanding access to healthcare	Governments, and Regulatory, Political and Economic Stakeholders
	#6	3 Intellectual property	Expanding access to healthcare	Other Companies
	#21	4 Health system strengthening	Expanding access to healthcare	Other Companies
	#27	5 Patient assistance programs	Expanding access to healthcare	Other Companies
Economic Sustainability	#4	6 Financial health & performance	Doing business responsibly	Financial Market Participants
	#8	7 Recruitment & retention of employees	Doing business responsibly	Governments, and Regulatory, Political and Economic Stakeholders
	#24	8 Fair contribution to society	Doing business responsibly	Other Companies
Environmental Protection	#25	9 Pharmaceuticals in the environment	Doing business responsibly	Other Companies
	#26	10 Pollution, waste & effluents	Doing business responsibly	NGOs, NPOs and Charitable Organizations
	#30	11 Sustainable use of resources	Doing business responsibly	Other Companies
Ethical Business Practices	#1	12 Ethical & compliant behavior	Doing business responsibly	Academia and Scientific Community
	#13	13 Respect for human rights	Doing business responsibly	Healthcare Providers / Industry
	#18	14 Responsible supply chain management	Doing business responsibly	Other Companies
	#19	15 Responsible use of new technologies	Doing business responsibly	Healthcare Providers / Industry
	#29	16 Animal testing	Doing business responsibly	Academia and Scientific Community
Good Governance	#7	17 Corporate governance	Doing business responsibly	Healthcare Providers / Industry
	#11	18 Data privacy and security	Doing business responsibly	Healthcare Providers / Industry
	#12	19 Transparency	Doing business responsibly	Healthcare Providers / Industry



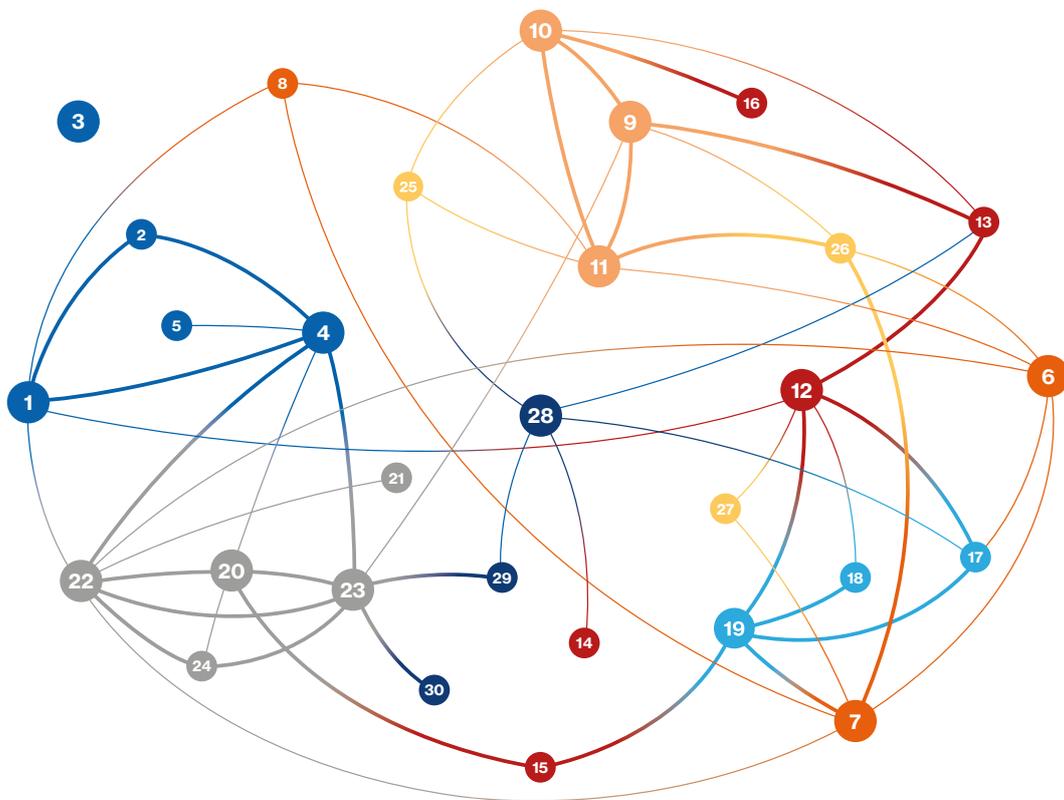
	Rank	CR topics	Strategic pillar	Stakeholder groups with highest impact rating
Innovation	#9	20 Innovative technologies	Expanding access to healthcare	NGOs, NPOs and Charitable Organizations
	#10	21 R&D for unmet medical needs	Expanding access to healthcare	Healthcare Providers / Industry
	#15	22 Business model innovation	Expanding access to healthcare	Academia and Scientific Community
	#22	23 Drug resistance	Expanding access to healthcare	Healthcare Providers / Industry
	#28	24 R&D for neglected diseases	Expanding access to healthcare	Healthcare Providers / Industry
Our People	#14	25 Health & safety	Doing business responsibly	Healthcare Providers / Industry
	#16	26 Fair working conditions	Doing business responsibly	Other Companies
	#20	27 Diversity & inclusion	Doing business responsibly	Healthcare Providers / Industry
Patient Health & Safety	#3	28 Pharmacovigilance, safety profile & quality of drugs	Expanding access to healthcare	NGOs, NPOs and Charitable Organizations
	#17	29 Counterfeit medicines	Expanding access to healthcare	Healthcare Providers / Industry
	#23	30 Health education & prevention	Expanding access to healthcare	Healthcare Providers / Industry

Correlation analysis

Our previous assessment looked at each topic separately. As many of these topics are in fact highly interlinked and connected, we wanted to understand how they correlate. We therefore used the quantitative results to conduct a correlation analysis in order to identify the strength of the statistical correlation from one topic to another. As we move forward, we intend to further analyze these correlations to better understand

potential levers and how these correlations can further inform our activities.

The graphic displays the five highest correlations of each priority topic (bigger points, marked bold in list). Correlations lower than 0.2 are not displayed. This relates to all correlations of “Intellectual property” and as a result it is not having any relevant correlations. All correlations displayed are based on performance scores.



How issues are correlated

Corr. > 0.2
 Corr. > 0.3

Access to healthcare

- 1 Pricing
- 2 Availability of medicines
- 3 Intellectual property
- 4 Health system strengthening
- 5 Patient assistance programs

Economic sustainability

- 6 Financial health & performance
- 7 Recruitment & retention of employees
- 8 Fair contribution to society

Environmental protection

- 9 Pharmaceuticals in the environment
- 10 Pollution, waste & effluents
- 11 Sustainable use of resources

Ethical business practices

- 12 Ethical & compliant behavior
- 13 Respect for human rights
- 14 Responsible supply chain management
- 15 Responsible use of new technologies
- 16 Animal testing

Good governance

- 17 Corporate governance
- 18 Data privacy and security
- 19 Transparency

Innovation

- 20 Innovative technologies
- 21 R&D for unmet medical needs
- 22 Business model innovation
- 23 Drug resistance
- 24 R&D for neglected diseases

Our people

- 25 Health & safety
- 26 Fair working conditions
- 27 Diversity & inclusion

Patient health & safety

- 28 Pharmacovigilance, safety profile & quality of drugs
- 29 Counterfeit medicines
- 30 Health education & prevention

Priority topics

Novartis applied the following criteria to internal and external survey results to further prioritize the CR issues and identify action areas. We identified 14 topics (excluding double-counting between criteria) that fulfill these criteria. We will discuss the input collected

through the surveys and interviews regarding these 14 priority topics with the Novartis topic owners to identify opportunities and define potential actions, where necessary. These may include changing practices, adapting new policies or improving our reporting.

Selection criteria	True for	New topics	Total	Description
High impact and low performance	6	+ 6	6	All topics that were rated high on impact but low on performance. We identified six such topics.
Very high impact or very low performance	7	+ 4	10	All topics with a high impact rating, including those where Novartis performance was rated very highly, as well as all topics with a relatively low performance rating even if the perceived impact was very low: We identified where we are performing well and should maintain the level of performance, and where we are performing poorly and will need to improve. We identified seven such topics.
High expert ratings for risk or opportunity	8	+ 2	12	All topics that were considered to have a high risk or opportunity in our topic expert surveys and interviews. This indicates the risks to control and opportunities to leverage. We identified eight topics in this area.
Significant differences external vs. internal	6	+ 2	14	All topics where internal and external stakeholders provided significantly different impact or performance ratings. Through this criterion, we identified where Novartis should take action to address differences in stakeholder perception. We identified six topics, two of which were new since our last MA.
Priority topics			14	

Discussion with topic owners to define action steps

[How we identified the 14 priority topics](#)

The following sections feature the 14 priority topics from a corporate responsibility perspective. For each topic, we explain why it may have an impact on Novartis and outline specific stakeholder observations. Internal and external stakeholders were given the opportunity to comment on the topics via open text fields in the surveys and through interviews.

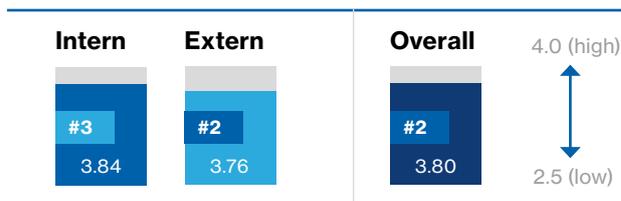
Selected views on each topic are provided below. We may not necessarily always agree with these stakeholder opinions, but we believe it is important to disclose them for transparency reasons. In addition, we feature the topics with the strongest correlations for each priority topic, as identified by the correlation analysis.

Access To Healthcare

Pricing

Definition: Responsible pricing for innovative and generic medicines as well as for devices that takes into consideration affordable access, positive cost-benefit ratio, and overall healthcare costs. Examples may include pricing models such as tiered pricing, managed entry agreements and value-based pricing.

Why is this a priority topic? High relative impact and low relative performance rating (overall); high risk (internal)



Response scale from 1.0 (low) to 4.0 (high)
indicates rank of the rating compared to other issues

Key statistical correlations

- Availability of medicines
- Business model innovation
- Ethical & compliant behavior
- Fair contribution to society
- Health system strengthening



Why the topic has an impact on Novartis?

Sustainable prices are needed to finance operations and investment in R&D and to help ensure broad access to our products. Some healthcare industry players misuse their market position to increase prices to unsustainable levels, increasing public scrutiny and pressure on drug prices. The pharmaceutical industry is often perceived as being conservative and not open to innovative pricing proposals, and, as a consequence, the public discussion focuses on IP strategies. We recognize that high prices can limit access to medicines in underfunded healthcare systems or out-of-pocket markets, and that setting prices not tied to outcomes and affordability is under scrutiny. What is often lost in the heated public debate around high prices for medicines are the health, efficiency and productivity gains for patients, the healthcare system and society as a whole. Beyond this, mark-ups in the supply chain, tariffs or taxes, etc. can also at times be significant, contributing to make medicines less affordable for patients. Innovative pricing strategies such as differential pricing, portfolio models, local brands, etc. can provide solutions to improve access to medicines in lower-income market segments. New pricing criteria that are outcome- or value-based are being explored in higher-income market segments, as are new funding models for governments to shoulder the cost of highly innovative therapies (e.g. payments in installments over several fiscal years).

Specific stakeholder observations

Stakeholders mentioned that there is a need for more systematic and consistent use of innovative pricing models. They also stated that there should be more consideration of the affordability of medicines for all patients, with more diverse price-setting schemes across income levels. Pharmaceutical companies should be more transparent about how product prices are set and should help to improve the public's understanding of the different price components paid by patients and payors (i.e. breaking down price into cost, taxes, mark-ups, etc.). They further expressed the need for companies to clearly articulate the rationale for any post-launch price increases, particularly in the US.

“Being more transparent on pricing would help in having an open discussion on accurate pricing.”

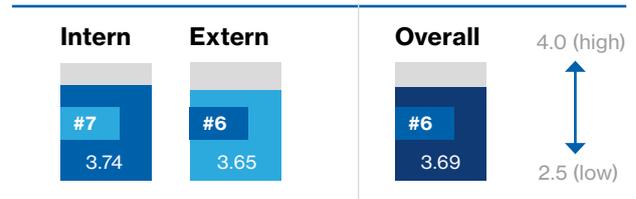
Jan Geissler, Co-Founder, CML Advocates Network

Access To Healthcare

Intellectual property

Definition: Responsible patent exclusivity management that balances intellectual property (IP) protection with the provision of affordable drugs. Examples may include participation in IP sharing and licensing arrangements.

Why is this a priority topic? Low relative performance rating (external)



Response scale from 1.0 (low) to 4.0 (high)
indicates rank of the rating compared to other issues

Key statistical correlations

“Intellectual Property” displays correlations to a number of other topics but these are all below 0.2.



Why the topic has an impact on Novartis?

In our research-intensive field, the IP system provides a proven, practical means to attract the massive investments needed to conduct and sustainably finance the complex activities, while enabling scientific knowledge-sharing in return for the granted period of exclusivity. While the importance of IP is generally accepted, IP protection is not actively enforced in some countries. There is a need for institutional frameworks that actively protect IP and allow innovative medicines to be developed for patients today and tomorrow. At the same time, we recognize that in many developing countries, disadvantages stemming from the economic development stage of these countries can create unique challenges that may interfere with the ordinary mechanics and typical benefits of a market-based patent system. Further, if IP is abused, it can hinder broad access and affect low-income patients. Therefore, IP should be managed responsibly, balancing out the disadvantages in case of improper use. We, and the industry overall, need to create trust with patent schemes that allow underserved patient groups to access innovative medicines.

Specific stakeholder observations

Novartis demonstrates an average exclusivity period, just below the industry average (vis-à-vis patent extension tactics). Novartis should also consider its moral obligation and use IP sparingly, i.e., only to the extent that it is adequate and necessary. Concerns remain that IP still contributes to monopolies as well as industry practices of “evergreening” (i.e., innovating for patent extensions instead of patient need). Overall, greater transparency of licensing schemes and patent extension tactics, filing and actively enforcing patents in all countries (particularly low and middle income countries and least developed countries), is needed. There should also be more flexibility in granting voluntary licenses.

“It takes a huge investment of resources to develop new drugs, therefore I understand the need for intellectual property.”

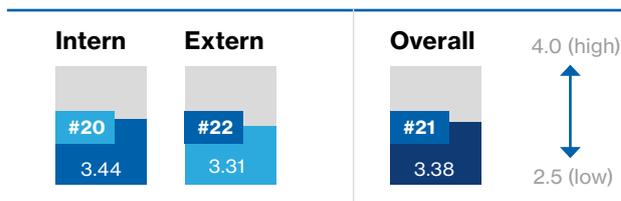
Timothy Mastro, Chief Science Officer, FHI 360

Access To Healthcare

Health system strengthening

Definition: Efforts to improve healthcare infrastructure and deliver healthcare-related services “beyond the pill”. Examples may include capacity building, training and education, partnerships involving public and private actors to improve healthcare access in underserved areas, and contribution to reducing healthcare costs for patients, payers and insurance companies.

Why is this a priority topic? Low relative performance rating (overall)



Response scale from 1.0 (low) to 4.0 (high)
indicates rank of the rating compared to other issues

Key statistical correlations

- Availability of medicines
- Business model innovation
- Drug resistance
- Patient assistance programs
- Pricing



Why the topic has an impact on Novartis?

Any medicine fundamentally requires a well-functioning health system to reach the patient that is in need. While Novartis is not primarily accountable, we have an interest in the establishment and maintenance of well-functioning health systems by governments. Only then can our medicines deliver the best possible health outcomes for patients, health-care systems and society at large. Strong health systems can also help to control costs and reduce price pressure on pharmaceutical products. A lack of skilled healthcare workers and systemic know-how, as well as insufficient infrastructure, can also lead to incorrect diagnoses and potentially to the inappropriate use of our medicines; even the most effective treatments have limited impact without skilled healthcare personnel. Healthcare systems also need strong regulatory systems to support pharmacovigilance, good manufacturing and clinical practices, which are vital to helping improve healthcare capabilities and patient outcomes.

Specific stakeholder observations

Novartis is highly reliant on well-functioning healthcare systems. There are differing views on whether Novartis should be solely a provider of medicines, or whether it is our obligation to also implement healthcare strengthening initiatives in relation to our portfolio. There is general agreement that the primary accountability of healthcare system strengthening lies with governments, and that private companies should only provide support within their limited area of expertise. It is clear that more discussion is needed to clarify the appropriate role of the pharmaceutical industry in healthcare system strengthening.

Stakeholders suggested a number of ways in which healthcare systems could be strengthened. These included the allocation of more – and more streamlined – resources, especially in the diagnosis and treatment of noncommunicable diseases. Solutions may include innovative financing, including co-financing for building inclusive healthcare systems, or horizontal care. Other suggestions included increased sharing of best practices among healthcare systems and more alignment among inter- and intra-industry collaborations. Stakeholders believe that any solutions should be informed by a better understanding of the unique local circumstances of individual healthcare systems, particularly in developing countries, and that success should be defined and measured over the long term and reported transparently.

“When getting into low income countries, the end of the supply chain is often broken and this is where Novartis should step in and contribute to solutions.”

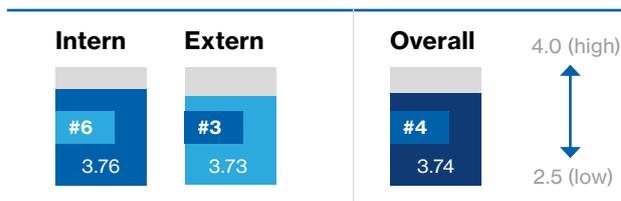
Sebastien Mazzuri, Director, FSG

Economic Sustainability

Financial health & performance

Definition: Ensuring the company’s continued viability, financial health and performance. Examples may include M&A, divesture activities, risk/crisis management and financial liquidity.

Why is this a priority topic? High relative impact (overall); high risk but also opportunity rating (internal)



Response scale from 1.0 (low) to 4.0 (high)
indicates rank of the rating compared to other issues

Why the topic has an impact on Novartis?

The long term financial sustainability of our business is sometimes challenged by a focus on short term gains. Dependence on R&D success makes the industry highly risky, especially as the market environment becomes increasingly complex and volatile. Novartis needs to continue to adjust to market developments, as it has done through numerous transformation processes in the past. There is a growing perception across a variety of stakeholders – including an increasing number of shareholders – that financial health is no longer defined solely by pushing for highest margins and strong financial results.

Key statistical correlations

- Business model innovation
- Corporate governance
- Fair working conditions
- Recruitment & retention of employees
- Sustainable use of resources



Specific stakeholder observations

Stakeholders are concerned that the culture may be too focused on short term profits, which undermines long term financial sustainability. There should be greater emphasis on strategic thinking to achieve strong financial performance in the long term.

“It all comes down to people. If leaders have the right balance between ethical business and economic sustainability, the rest will follow. Leading by example and creating the right work environment is critical, including the right incentives and the right tools.”

Brigitta Keller, Head of Treasury and Trade Solutions Switzerland, Citi

“There needs to be a balance between innovating for the public interest and pricing to ensure the economic sustainability of the product overall.”

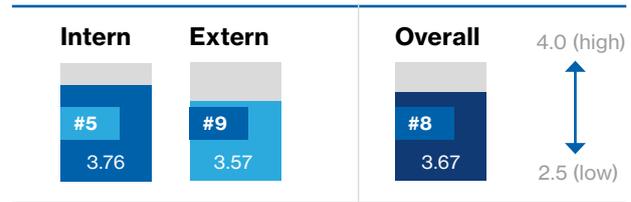
Richard Wilder, Associate General Counsel, Bill & Melinda Gates Foundation

Economic Sustainability

Recruitment & retention of employees

Definition: Human resources management that aligns recruiting efforts with strategy and provides talent management programs to engage and retain associates with relevant skill sets and ensure continuity through reduced associate turnover.

Why is this a priority topic? High relative impact rating (overall); high risk but also opportunity rating (internal)



Response scale from 1.0 (low) to 4.0 (high)
indicates rank of the rating compared to other issues

Key statistical correlations

- Business model innovation
- Diversity & inclusion
- Fair contribution to society
- Fair working conditions
- Transparency



Why the topic has an impact on Novartis?

A company’s employees are essential to its success. The life sciences industry is highly knowledge- and skills-based, and in competition for talent. High employee turnover can lead to knowledge outflow and lower the return on investment to the company in terms of training and education of employees. Employee motivation is key to continued innovation, and the company needs to find creative solutions to maintain productivity and retain high performing associates, while attracting new talent.

Specific stakeholder observations

Stakeholders highlighted some of the key challenges they believe Novartis faces in this area, including a lack of diversity and inclusion at senior levels and relatively high turnover in its sales force. They also noted that in order to retain talent across the board, the company will have to deal with changing expectations, especially among younger employees, who believe that company culture, purpose and non-financial incentives strongly matter. Offering consistent development opportunities also plays an important role in retaining talent.

In addition, Novartis can consider recruiting from a more diverse range of academic institutions, fostering a more engaging, collaborative and entrepreneurial work environment, enabling individual working styles and increasing acceptance for different cultural styles, while also offering flexible and fair working conditions and decent pay across the globe. This means, for example, ensuring part-time employees have equal career development opportunities as full-time employees, providing a stable and consistent work environment, better managing workload to avoid overloading associates and offering guidance on better work-life integration.

“The turnover and employee engagement [rates] are a benchmark to peers. Since competition for talent will be challenging going forward, companies should have a discussion on what kind of talents they need going forward, and how they will meet those requirements.”

Jacob Messina, CFA - Head of Sustainability Investing Research, RobecoSAM

Environmental Protection

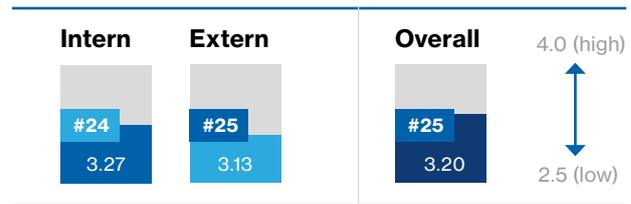
Pharmaceuticals in the environment

Definition: Efforts to minimize the environmental impact of our activities and products over their lifecycle and to ensure proper and legal disposal of waste containing active pharmaceutical ingredients.

Why is this a priority topic? Lower relative performance rating (by externals)

Why the topic has an impact on Novartis?

Pharmaceuticals in the environment (PiE) can have a substantial negative long term impact on natural resources and society, e.g. by contributing to antimicrobial resistance (AMR). The public expects that pharmaceutical companies will help address this problem by engaging in all areas across the life-cycle of medicinal products, from production to consumption and disposal. However, understanding how to limit PiE across the entire value chain can be extremely complex, and pharmaceutical companies can face potential legal repercussions not only when pollution occurs in direct operations, but also up-stream in the supply chain. Rising levels of PiE could also have regulatory consequences.



Response scale from 1.0 (low) to 4.0 (high)
indicates rank of the rating compared to other issues

Key statistical correlations

- Drug resistance
- Fair working conditions
- Pollution, waste & effluents
- Respect for human rights
- Sustainable use of resources



Specific stakeholder observations

Overall, stakeholders feel that PiE is under-regulated. They believe that Novartis needs to be more transparent regarding its performance in this area, particularly as stakeholder awareness on PiE grows, and the consequences of PiE become more serious. Novartis should seek to better understand and minimize the risk of PiE in its supply chain and where operations are outsourced.

“There is increasing focus on the topics of anti-microbial resistance and pharmaceuticals in the environment, and we suspect there will be an associated request for enhanced transparency in the near future.”

Eric Kane, Sector Analyst – Health Care, Sustainability Accounting Standards Board

Environmental Protection

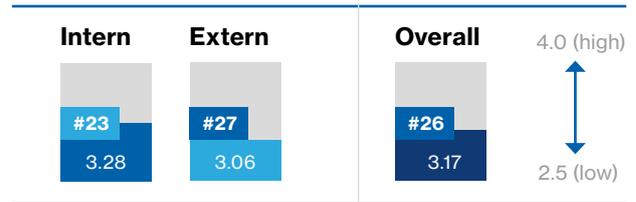
Pollution, waste & effluents

Definition: Reduction and management of emissions, pollution, waste (including use of hazardous chemicals and ozone-depleting substances) and effluents. This includes activities to mitigate climate change and its impacts on human health.

Why is this a priority topic? High opportunity rating (internals)

Why the topic has an impact on Novartis?

Improper management of emissions, waste, and effluents can have substantial negative long term impacts on the environment and society and carries with it potential legal repercussions and regulatory consequences. Climate change will potentially have a major impact on global health and the way Novartis will be able to conduct its business; therefore, there is a strong intrinsic interest in taking action to reduce our own environmental footprint. The industry must act responsibly and with caution; while there is little positive attention that comes from doing well, negative media coverage of shortcomings, even in external supply chains, can cause great reputational damage. By incorporating circular processes and recycling resources, Novartis can save costs while reducing pollution, waste and effluents. By putting an internal price on carbon, Novartis can better consider this externality in decision-making and prepare for a time when negative externalities may have to be internalized.



Response scale from 1.0 (low) to 4.0 (high)
indicates rank of the rating compared to other issues

Key statistical correlations

- Animal testing
- Health & safety
- Pharmaceuticals in the environment
- Respect for human rights
- Sustainable use of resources



Specific stakeholder observations

More proactive and consistent engagement across the company on this issue would be beneficial, including encouraging all associates to recognize their responsibility to minimize pollution, waste and effluents. Novartis should do more to understand the potential impacts of climate change on its operations and should make visible commitments to control and measure emissions, waste and effluents throughout its supply chain. Novartis can be more transparent with respect to all its efforts in this area.

“Going forward, climate change will prove challenging through potential pandemics/endemics.”

Jacob Messina, CFA - Head of Sustainability Investing Research, RobecoSAM

Environmental Protection

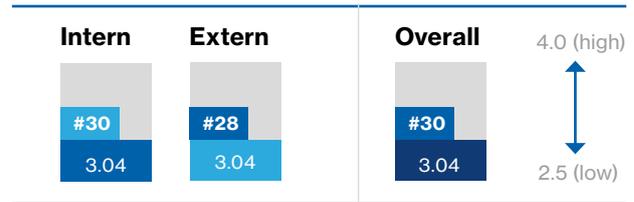
Sustainable use of resources

Definition: Measures to ensure efficient consumption of energy, water and other resources. This includes efforts to responsibly source, recycle and/or reuse natural resources; manage the company’s impact on plant and animal life; and preserve biodiversity.

Why is this a priority topic? High opportunity rating (internals)

Why the topic has an impact on Novartis?

Production of medicines depends crucially on the long term protection and sustainable management of natural resources. The larger the planet’s biodiversity the more potential we have to discover organic compounds for biochemicals and access genetic resources for novel biologics. Unsustainable use of energy, water and other resources can have substantial negative long term impacts on the environment and society and carries with it regulatory and reputational risk. Companies are increasingly being held accountable for performance in their external supply chains, which are complex and lack transparency. By incorporating measures to use resources more efficiently, Novartis can save cost, while sustaining resources and even positively impacting biodiversity.



Response scale from 1.0 (low) to 4.0 (high)
indicates rank of the rating compared to other issues

Key statistical correlations

- Fair contribution to society
- Fair working conditions
- Health & safety
- Pharmaceuticals in the environment
- Pollution, waste & effluents



Specific stakeholder observations

Novartis should increase awareness of this issue internally and call on the responsibility of all associates to save resources. In terms of its own operations and supply chain, Novartis should incorporate more circular processes and set ambitious public targets to control the use of resources throughout the supply chain. Novartis should communicate more openly with respect to its efforts to use resources sustainably.

“Novartis maintains a strong focus on industry-specific traditional corporate responsibility themes in an effort to appropriately mitigate its negative footprint (e.g., environmental impact throughout the value chain).”

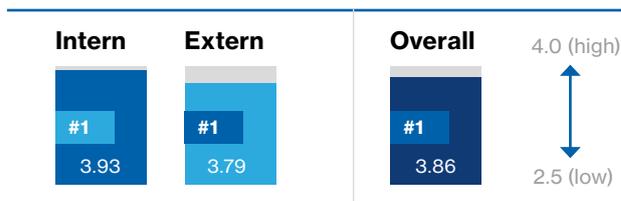
Sebastien Mazzuri, Director, FSG

Ethical Business Practices

Ethical & compliant behavior

Definition: Processes and systems to ensure Novartis operates in line with high ethical standards especially in regard to our interactions with patients and healthcare professionals. Examples may include adherence to laws and regulations, anti-bribery, anti-corruption and anti-trust; responsible advocacy, lobbying and political contributions; and responsible incentive structures and compensation.

Why is this a priority topic? High relative impact and low relative performance rating (overall); high risk but also opportunities (internal); low relative performance rating (external)



Response scale from 1.0 (low) to 4.0 (high)
indicates rank of the rating compared to other issues

Key statistical correlations

- Corporate governance
- Data privacy and security
- Diversity & inclusion
- Respect for human rights
- Transparency



Why the topic has an impact on Novartis?

Poor ethical practices can harm patients and other stakeholders, and lead to fines, public scrutiny and distrust that will most likely also affect sales and profits. Ethical business practices are the bedrock of a well functioning economic system and therefore need to be nurtured and strengthened; otherwise, trust in the system will erode with negative overall impact. We share the expectation of the public that companies do what is ethically right and do not just comply with what is legal. Unethical business practices can overshadow good performance in all other material CR areas, destroy reputation and undermine the morale and engagement of our associates. They can also affect collaboration opportunities with other stakeholders as we lose their trust. Finally, consistently poor conduct may lead to increased regulatory density and scrutiny as a response.

Specific stakeholder observations

Novartis has been involved in litigation and has received negative media coverage arising from certain misconduct allegations. There are several areas for improvement to consider. Too high or even unrealistic targets, and even heavy workloads and pressure to deliver against stretched targets, can drive associates to make the wrong choices. Therefore, ethical behavior should be incentivized and rewarded to the same extent and in the same way as business performance for all Novartis operations, including the sales force. Leaders must be strong and clear on this issue, serving as role models that champion ethical and compliant behavior. Ethical concerns should be discussed within the company before these become issues or even crises. There is a need for greater transparency – in terms of the company’s relevant objectives, KPIs and the outcomes of mitigation actions, as well as business practices in its supply chain. Ethical considerations are often seen to be sacrificed in the interest of remaining competitive.

“The most material issue from an investors perspective is ethical business practices and product quality as well as safety. These can have the most material and onerous impact on company’s financial health and reputation.”

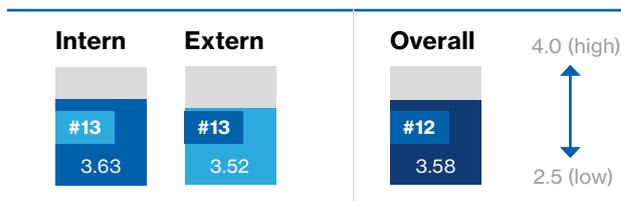
Yo Takatsuki; Director, Analyst, Governance and Sustainable; Investment BMO Global Asset Management (EMEA)

Good Governance

Transparency

Definition: Ensuring appropriate scope and quality of information disclosure and reporting and engaging in dialogue with our stakeholders. Examples may include disclosing information that is critical to stakeholders such as the risk/safety profiles of products, misconduct cases, support of patient groups and political parties, and trial data.

Why is this a priority topic? High relative im-pact and low relative performance rating (overall)



Response scale from 1.0 (low) to 4.0 (high)
indicates rank of the rating compared to other issues

Key statistical correlations

- Corporate governance
- Data privacy and security
- Ethical & compliant behavior
- Recruitment & retention of employees
- Responsible use of new technologies



Why the topic has an impact on Novartis?

Transparency is essential to secure and maintain the trust of our stakeholders with regard to the company and our operating model. Transparency in the pharmaceutical industry is a broad, multi-dimensional topic. The term is used in various ways in industry discourse to describe the presence of and adherence to “hard” procedures, principles, and protocols, as well as to refer to “softer” but no less significant corporate behavior traits, such as the degree to which a company is perceived to be open, clear and proactive in its communications. We think that a consistently transparent approach should meet the following criteria:

- The information provided should be truthful, complete and useful;
- Stakeholders should be engaged in identifying the information that is relevant to them;
- The company should be accountable for objective, balanced reporting of our activities and policies.

Specific stakeholder observations

Stakeholders offer a variety of suggestions to improve transparency at Novartis. They push for greater transparency regarding non-financial indicators. They emphasized that the tone of the company’s reporting and disclosures should be reviewed to ensure it is collaborative and humble. It could also be better balanced and cover the dilemmas and challenges that the company faces more openly. Novartis should also engage in public discussions related to its CR material issues, for example by proactively contributing its views on standards, practices and sanctions.

“It is crucial to talk about the dilemmas Novartis faces and to communicate them to the critical stakeholders.”

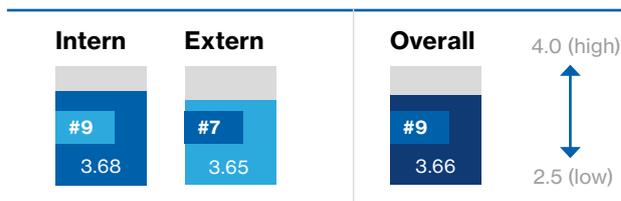
Veronika Hendry, President, Actares

Innovation

Innovative technologies

Definition: Making the most of advances in IT and digital connectivity to advance R&D for products and outcomes and revolutionize the delivery of healthcare services. Examples may include using big data analysis or developing personalized healthcare solutions (e.g. products with companion diagnostic tests) and improving health solutions based on data collected by wearables.

Why is this a priority topic? High relative impact and low relative performance rating (overall); high opportunity rating (internal); low relative performance rating (internal)



Response scale from 1.0 (low) to 4.0 (high)
indicates rank of the rating compared to other issues

Key statistical correlations

- Business model innovation
- Drug resistance
- Health system strengthening
- Responsible use of new technologies
- R&D for neglected disease



Why the topic has an impact on Novartis?

Through our work in the diagnosis and treatment of diseases, finding innovative solutions that improve health outcomes is at the core of what we do. New research insights, product offerings and pricing models will increasingly be informed by data and advanced analytics, not least streaming from our enormous database of clinical trials. New technologies (e.g., apps, wearables) will enable Novartis to better understand individual patients and treat them according to their specific needs. We are already witnessing this with the growing importance of mobile and electronic health. We are also exploring using machine learning to replace certain lab experiments with computer simulations and generating DNA encoded libraries to rapidly expand our collection of small molecules that serves as a starting point for potential new medicines. At the same time, we are investing in a variety of emerging technologies that could help make the drug development process smarter, faster and cheaper, including advanced analytical tools aimed at improving the efficiency and effectiveness of our trials. As other industries with huge disruptive potential move into the healthcare space, Novartis will need to adapt and experiment with new technologies to remain competitive.

Specific stakeholder Observations

Stakeholders expressed that Novartis needs to explore a number of avenues. They recommend that we invest in innovative technologies “beyond the pill” (including diagnostics), leverage digital technology, such as wearables, to support specifically patients and explore technological solutions to help overcome shortcomings in health infrastructure and revolutionize the delivery of healthcare services. In order to prepare for the competition from technology companies, it is recommended that we seek collaborations with technology leaders and work to improve our understanding of future technologies and prepare to take more calculated risks in this area.

“Novartis comes across as very thoughtful in what they do in the technology space, especially when it comes to communicating with patients. As the COPD Foundation and patient community become more embedded with technology, Novartis should continue to look at the current technological landscape and evaluate how it will continue to adapt to the needs of patients and their families.”

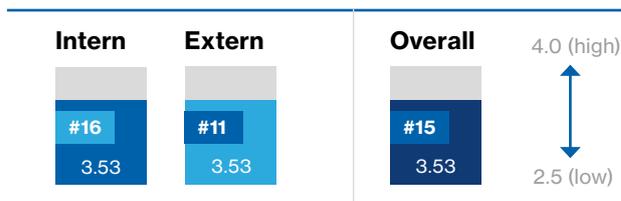
Sara Latham, Executive Vice President, COPD Foundation

Innovation

Business model innovation

Definition: Efforts to respond to emerging health needs and trends through changing the existing business model and/or developing new business models. Examples may include responding to the needs of low-income patients and the growing healthcare burden of noncommunicable diseases (NCDs).

Why is this a priority topic? High relative impact and low relative performance rating (overall); high risk but also opportunities (internal); low relative performance rating (internal)



Response scale from 1.0 (low) to 4.0 (high)
indicates rank of the rating compared to other issues

Key statistical correlations

- Drug resistance
- Health system strengthening
- Innovative technologies
- R&D for neglected diseases
- R&D for unmet medical needs



Why the topic has an impact on Novartis?

Public scrutiny and pressure is driving a growing need for business model innovation in traditional markets. New market entrants may be able to disrupt the industry and capture considerable value from that which is currently captured by the industry. In developing markets, especially those with large populations, new business models will be necessary for Novartis to succeed. To remain competitive through technological advancements, which also disrupt our industry, Novartis needs to experiment with new business models and be a driver of change. As a pharmaceutical company, we have a moral obligation to contribute to expanding access to our medicines for patients. New business models need to be established to increase access to our medicines and help improve patient health in a sustainable way and at scale.

Specific stakeholder observations

When it comes to business model innovation, a relatively new area, stakeholders suggested a number of different types of scalable innovative business models to be explored. Specifically, models that improve health outcomes, leverage innovative technologies and are more specific to the needs of the patient. New models should take into account individual market differences, particularly in lower-income segments, and ought to be flexible enough to be customized to local circumstances and to be applied to private as well as public healthcare channels. Innovative approaches move beyond disease management and focus on disease prevention. It was further emphasized that business model innovation is needed to ensure accessible and affordable delivery of personalized medicines moving forward. Stakeholders also called for greater transparency on the success, failure and sustainability of new business models.

“In a world with scarce resources, continued innovation is key. This insight applies to business models as well as product innovations. The most exciting developments are with forward-leaning models that serve much larger populations and yield great health outcomes. Other companies have not yet been able to do this both profitably and sustainably. Driving better health outcomes by applying novel skills in unexpected ways will become crucial to yielding added value in the future.”

Jeffrey L. Sturchio, President & CEO, Rabin Martin

Innovation

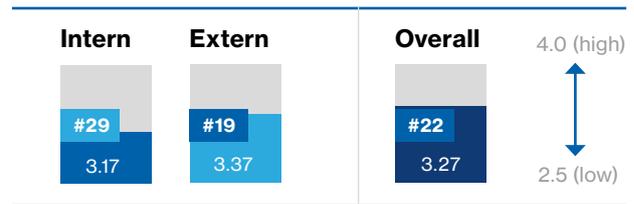
Drug resistance

Definition: Contributing to the global response to drug resistance that is caused e.g. by inappropriate use and environmental pollution through antimicrobials.

Why is this a priority topic? Low relative performance rating (overall); High relative impact rating (external)

Why the topic has an impact on Novartis?

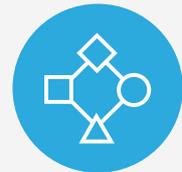
The growing threat of antimicrobial resistance (AMR) – when bacteria or parasites evolve to resist antibiotics – could bring us back to a time when people feared common infections, and when even minor surgery could prove fatal. Resistance to drugs could have an impact at tremendous scale that would most likely affect underprivileged patients more severely. AMR has the potential to render our current infectious disease portfolio ineffective, potentially resulting in a loss of assets and revenue. While tackling AMR is a multi-stakeholder issue, the pharmaceutical industry will also suffer if no solutions are found. However, a lack of incentives that would enable sustainable business models for future antibiotics – and therefore encourage more long-term investment in R&D – hinders the industry’s efforts to develop solutions that address this challenge. AMR has been recognized by international institutions and governments across developed and developing countries as one of the most serious global health threats.



Response scale from 1.0 (low) to 4.0 (high)
indicates rank of the rating compared to other issues

Key statistical correlations

- Business model innovation
- Counterfeit medicines
- Health education & prevention
- Innovative technologies
- R&D for neglected diseases



Specific stakeholder observations

There are many causes of AMR that the industry can impact: inappropriate use of drugs, counterfeit medicines, antibiotic residue in foods, improper disposal of drugs, environmental pollution through antibiotic production, etc. Stakeholders expect the pharmaceutical industry to more proactively manage this issue and exercise stronger stewardship. Stakeholders also suggested there is an opportunity to gain credibility through being active on this shared global challenge, including thinking more innovatively and being part of collaborative responses.

“Novartis is not a front bench company. Antimicrobial resistance is a big issue for the industry. The topic is discussed at Novartis and I would like to see it move up the ladder. Overall there is a need for new incentives to push R&D and Novartis needs to go beyond what people expect to earn respect.”

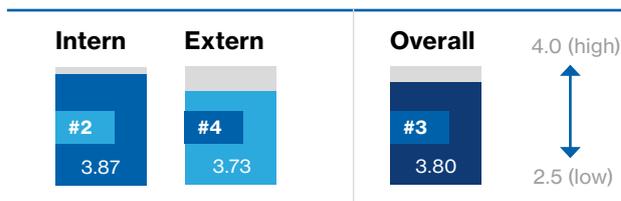
Thomas B. Cueni, Director General, IFPMA

Patient Health & Safety

Pharmacovigilance, safety profile and quality of drugs

Definition: Ensuring healthcare products (patented pharmaceuticals, generics, and devices) are manufactured at the highest quality level and that the efficacy and safety features of a medicine/device outweigh its risks (e.g. side effects), as well as to collect and record adverse event reports. This includes transparent and timely communication in the case of product safety or quality issues (e.g. prompt product recalls).

Why is this a priority topic? High relative impact rating (overall)



Response scale from 1.0 (low) to 4.0 (high)
indicates rank of the rating compared to other issues

Key statistical correlations

- Corporate governance
- Counterfeit medicines
- Health & safety
- Respect for human rights
- Responsible supply chain management



Why the topic has an impact on Novartis?

The safety and quality of our products directly impact patient health and are of paramount importance to Novartis. When medicines are withdrawn for safety or quality reasons, this negatively affects the availability of appropriate treatments and could have severe health consequences for patients. Legal and regulatory repercussions from poor quality or asafety issues can also be significant – not to mention the potential reputational damage. A credible reputation and high-quality products provide a competitive advantage, both in developed and developing countries. In fact, it has been shown that lower income patients may show more willingness to purchase drugs from trusted brands. Transparency and immediate action in the event of product quality or safety issues is important to guarantee the safety of patients and to maintain trust.

Specific stakeholder observations

Stakeholders consider Novartis to have strong pharmacovigilance procedures, standards and processes. Thorough management and transparency in case of issues is critical, and Novartis has a good record of prompt product with draws. There is scope to improve pharmacovigilance systems within the healthcare systems of low and middle income countries. Some also suggested that different pharmacovigilance re-ported requirements should be explored for “older” generic medicines. While product quality and patient safety are paramount, an overly cautious approach can unnecessarily reduce patients’ access to drugs that they need. We need to better understand this balance.

“These issues are at the frontier of developing innovative medicines. It is really important for Novartis to invest, and indeed engage with patients, to ensure high standards.”

Nicola Bedlington, Secretary General, European Patients’ Forum

Next steps & outlook

Impact valuation

The results of the 2013 CR materiality assessment informed our initial financial, environmental and social (FES) impact valuation, as they provided the basis for the impact areas of Novartis on society and the environment. The results of the FES impact valuation

reflect our social value beyond financial performance, taking into account benefits and costs to society in monetary terms. Similarly, the results of the 2017 MA will be used to help ensure relevant adjustment of the FES impact valuation⁴.

Engagement with internal stakeholders

The results of the MA will be discussed with all relevant internal stakeholders. We plan to review the findings, and to review our activities in the relevant areas to define whether we need to adjust or improve them based on the input we have received. In addition, we plan to assess whether new activities are needed to address performance gaps or whether we have to adjust the way we engage with our stakeholders.

The high participation rate (35%) for the internal survey demonstrated the high degree to which associates are interested in CR-related topics. We will share and discuss the results of the MA, as well as the insights and actions emerging from it, with a broad internal audience in 2018.

Engagement with external stakeholders

Novartis is interested in building and maintaining strong relationships with external stakeholders. We are thankful for the significant interest in the MA and the feedback stakeholders have provided. We will share this report with all stakeholders who participated in the assessment.

in key material areas. We plan to continue to organize these webinars to inform external stakeholders about the next steps in the MA cycle, as well as the resulting actions and any future outcomes. Please share your thoughts and feedback via cr.materiality@novartis.com

Over the course of 2015 and 2016, Novartis successfully organized webinars to inform about our actions

To stay on top of all Novartis CR news, subscribe to our E-Newsletter⁵.

For more information, please contact:

Corporate Responsibility
Denise Weger
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⁴ http://docs.wbcsd.org/2017/05/IVR_Impact_Valuation_White_Paper.pdf

⁵ <https://www.novartis.com/our-company/corporate-responsibility/corporate-responsibility-e-newsletter>

Appendix

Access To Healthcare

1. Pricing

Responsible pricing for innovative and generic medicines that takes into consideration affordable access, positive cost-benefit ratio, and overall healthcare costs. Examples may include pricing models such as tiered pricing, managed entry agreements, outcome-based pricing and non-exclusive voluntary licensing.

2. Availability of medicines

Efforts to manage barriers which may prevent, restrict or delay medicine availability for patients in need. Examples may include the registration process requirements, inefficient distribution and supply chain management etc.

3. Intellectual property

Responsible patent exclusivity management that balances IP protection with the provision of affordable drugs. Examples may include participation in IP sharing arrangements and avoidance of compulsory licensing.

4. Health system strengthening

Efforts to improve healthcare infrastructure and deliver healthcare-related services “beyond the pill”. Examples may include capacity building, training and education, partnerships involving public and private actors to improve healthcare access in underserved areas, and contribution to reducing health care costs for payers, insurance companies and consumers.

5. Patient assistance programs

Programs that support financially needy patients to either purchase their necessary medication at an affordable price or receive it for free.

Economic Sustainability

6. Financial health & performance

Ensuring the company's continued viability, financial health and performance. Examples may include M&A, divesture activities, risk/crisis management, and financial liquidity.

7. Recruitment & retention of employees

Human Resources management that aligns recruiting efforts with strategy and provides talent management programs to engage and retain associates with relevant skill sets and ensure continuity through reduced associate turnover.

8. Fair contribution to society

Ensuring good relations and appropriate economic contribution in the areas in which the company operates. Examples may include payment of appropriate amount of tax and efforts to support the economy in countries of operation (e.g. local employment, local suppliers, active engagement in local initiatives).

Environmental Protection

9. Pharmaceuticals in the environment

Efforts to minimize the environmental impact of our activities and products over their lifecycle and to ensure proper and legal disposal of waste containing active pharmaceutical ingredients.

10. Pollution, waste & effluents

Reduction and management of emissions, pollution, waste (including use of hazardous chemicals and ozone-depleting substances) and effluents. This includes activities to mitigate climate change and its impacts on human health.

11. Sustainable use of resources

Measures to ensure efficient consumption of energy, water and other resources. This includes efforts to responsibly source, recycle and/or reuse natural resources; manage the company's impact on plant and animal life; and preserve biodiversity.

Ethical Business Practices

12. Ethical & compliant behavior

Processes and systems to ensure Novartis operates in line with high ethical standards especially in regards to our interactions with healthcare professionals. Examples may include adherence to laws and regulations, anti-bribery, anti-corruption and anti-trust; responsible advocacy, lobbying and political contributions; and responsible incentive structures and compensation.

13. Respect for human rights

Positions, policies and management systems to respect human rights across the business and direct supply chain. Examples may include implementation of responsible clinical trials in developed and developing countries, protection of personal data, and the right to health / healthcare.

14. Responsible supply chain management

Processes and systems to ensure a responsible supply chain and that our direct suppliers uphold appropriate standards on financial, social and environmental issues. Examples may include outsourcing, third party manufacturing, the use of clinical research organizations, supplier audits and transparent reporting practices.

15. Responsible use of new technologies

Ensuring appropriate handling of and response to controversial ethical questions relating to technological advancements. Examples may include cloning, human genetic engineering (e.g. genome editing through CRISPR), nanotechnology, wearables and life extension.

16. Animal testing

Measures to keep animal testing at a minimum and ensure tests are conducted according to the highest animal welfare standards.

Good Governance

17. Corporate governance

Ensuring the company management structure balances the interests of its relevant stakeholders and the company is transparent and discloses critical information to stakeholders. Examples may include rules and regulations to ensure board independence, shareholder rights and engagement, and levels of executive compensation and golden parachutes.

18. Data privacy and security

Systems to ensure that the personally identifiable information of patients, employees, consumers and others is responsibly and securely collected, transferred and stored.

19. Transparency

Ensuring appropriate scope and quality of information disclosure and reporting, and engaging in dialogue with our stakeholders. Examples may include disclosing information that is critical to stakeholders such as the risk/safety profiles of products, misconduct cases, support of patient groups and political parties, and trial data.

Innovation

20. Innovative technologies

Making the most of advances in IT and digital connectivity to advance R&D for products and outcomes, and revolutionize the delivery of healthcare services. Examples may include using big data analysis or developing personalized healthcare solutions (e.g. products with companion diagnostic tests) and improving health solutions based on data collected by wearables.

21. R&D for unmet medical needs

Maintaining high investments in creating innovative medicines that address unmet medical needs with a focus on maximizing patients' outcome before considering market -potential. This includes the research of new compounds but also the modification of existing medicines e.g. to improve access or efficacy for poor and specifically vulnerable patient groups.

22. Business model innovation

Efforts to respond to emerging health needs and trends through changing the existing business model and/or developing new business models. Examples may include responding to the needs of low income patients and the growing healthcare burden of noncommunicable diseases (NCDs).

23. Drug resistance

Contributing to the global response to drug resistance that is caused e.g. by inappropriate use and environmental pollution through antimicrobials.

24. R&D for neglected diseases

R&D for diseases which disproportionately affect people in low income settings, for which little or no treatment options are available and where market failure limits research activities. This may include infectious and tropical diseases.

Our People

25. Health & safety

Ensuring the health and safety of associates. This includes efforts to reduce fatalities, injuries and sick leave and to promote well-being through health programs.

26. Fair working conditions

Ensuring fair employment practices, including upholding labor rights to freedom of association and collective bargaining, labor relations and union practices, and fair compensation and benefits. This may also include work-life balance considerations.

27. Diversity & inclusion

Ensuring equal opportunities and fostering a diverse and inclusive workplace where each associate can contribute and be recognized. This applies in terms of age, ethnicity, gender, nationality, language, sexual orientation, physical ability, and religious and personal beliefs.

Patient Health & Safety

28. Pharmacovigilance, safety profile & quality of drugs

Ensuring healthcare products (patented pharmaceuticals and generics) are manufactured at the highest quality level and that the efficacy and safety features of a medicine outweigh its risks (e.g. side effects), as well as to collect and record adverse event reports. This includes transparent and timely communication in the case of product safety or quality issues (e.g. prompt product recalls).

29. Counterfeit medicines

Using the company's influence to fight counterfeit drugs around the world.

30. Health education & prevention

Efforts to promote the effective use of medicines, health literacy and disease prevention awareness. Examples may include treatment adherence, contributing to solutions to the rising burden of noncommunicable diseases (NCDs) or chronic illnesses, and substance abuse prevention.

