

# The Effect of Wearable and Tearable Climate and Weather on Wearable Technology

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## Abstract

This article discusses the effect of wearable tearable climate and weather on wearable technology. Climate change refers to long term shifts in temperature and weather patterns, mainly caused by human activities, especially the burning of fossil fuels and unsustainable infrastructural development. Strategic environmental assessment (SEA) process can be broadly defined as a study of the impacts of a proposed project, plan, project, policy, or legislative action on the environment and sustainability. The significance of the work entitled "Sustainable Wearable Climate and Weather Management" is mainly confirmatory as it solves environmental and social problems. In this research, the SEA process has been aimed to incorporate environmental and sustainability factors into wearable climate and weather management includes climate change and control as an example like production and manufacturing process project planning and decision-making processes such as project formulation and appraisal of wearable climate and weather projects like wear and tear of dust-producing grinding chrome composite leather clad rollers and washers commonly used in seed-cotton Indian roller ginning machines, wastewater treatment process, rotating biological contactors, trickling filter bed, biomedical parts, marine biopolymers, Indo-Matsushita midget electrode (battery carbon rod) plant in 1979 at Tada, sustainable bridge, road, and sanitation structure, green building, nuclear power plant, cotton roller ginning plant and concrete that included policies, programs, plans, and legislative actions. Sustainable materials for manufacturing process development is a kind of development that meets the needs of the present without compromising the ability and efficacy of future generations to meet their own needs. Environmental Impact Assessment (EIA) process can be defined as the systematic study of the potential impacts (effects) of proposed projects, plans, programs, policies, or legislative actions relative to the physical-chemical, biological, bio-medical, cultural, and socioeconomic components of the total environmental product life cycle. The primary purpose of the EIA process is to encourage the consideration of the environment in the Organizational 's wearable and tearable climate and weather management project planning and decision-making process and to arrive at environmentally compatible actions. The sustainable wearable climate and weather management process should include the integrated consideration of technical or engineering, economic, environmental, safety, and health, social, and sustainability

factors to achieve business excellence as per post COVID-19 World Scenario. Before the National Environmental Policy Act (NEPA) process in 1970 in the USA, technical and economic factors dominance the World's manufacturing process projects. The objective of the study is to conceptualize a training course module incorporating the SEA process for the Sustainable Environmental Wearable and Tearable Climate Change and Weather Control for the officers of Bihar Institute Public Administration and Rural Development (BIPARD), Patna, Bihar, India during the Research Year (RY) 2023-2024. The design of the study is cross-sectional. The limitation or recommendation of the study and check is to apply strategic environmental assessment process for sustainable environmental climate change and control towards sustainable development.

**Keywords** Climate change; Environment; Health; Tearable; Weather; Wearable

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## Introduction

The entitled "Climate Change" means that the change in general weather conditions in an area over a long period of time or change in weather trend or change in general attitude of weather conditions such as temperature, humidity, dew point, pressure, volume, wind rose, water, air land (LAW) movement, photo chemical and biochemical smog, and sunlight energy (photo energy).

The following project formulation and appraisal statements elucidate on wearable and tearable technologies:

a. The project formulation and appraisal of wearable and tearable climate and weather projects like wear and tear of dust-producing grinding chrome composite leather clad rollers and washers commonly used in seed-cotton Indian roller ginning machines that contaminates and pollutes lint cotton in double roller ginning factories.

This article focuses on wearable and technology.

b. To create awareness on environment, pollution, contamination, protection, prevention, control, and abatement of environmental pollution.

c. To train about the environmental quality through ecological principles and total quality management principles.

d. To create awareness on integration of environment and development

e. To create awareness about stabilization of greenhouse gas concentrations "at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system."

f. To create awareness on various "Emissions resulting from human activities are substantially increasing the atmospheric concentrations of greenhouse gases."

g. To elucidate power point presentations on how to prevent dangerous manufacture interference with the global climate system based on profound knowledge system and case studies

h. To train about the protection and improvement of the human health (agricultural safety and health) and biosphere anthropological environment explain with a publication handout.

To elucidate importance of sustainable plans and policy decisions that relate to the protection and Improvement.

i. To train various aspect integration of environment and development for sustainable development.

j. To train about environmental protection laws, policies and impact assessment laws.

### Materials and Methods

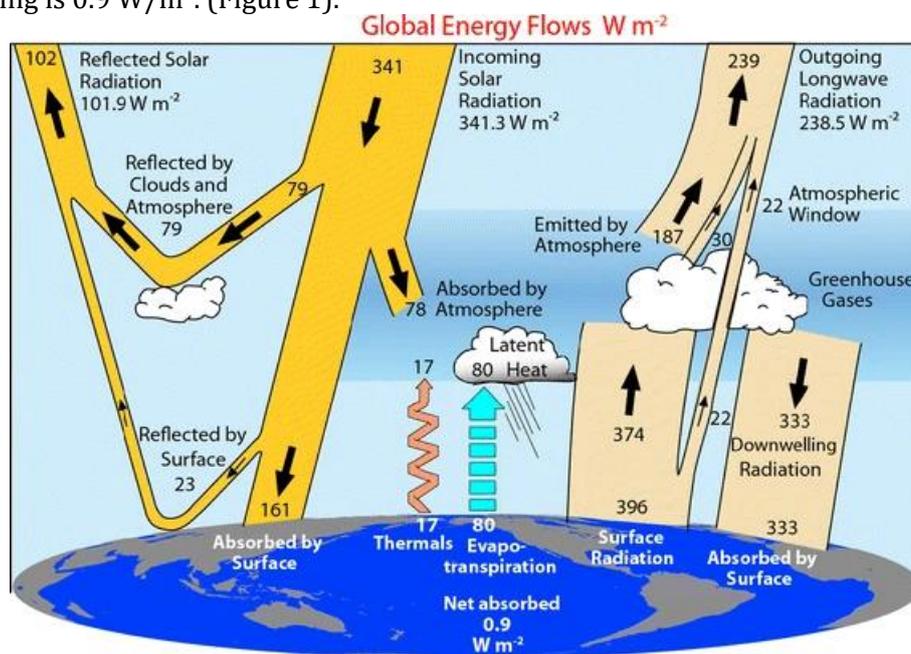
“Environment” includes water, air and land and the interaction and interrelationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organisms and Property. Environment means the surroundings in which a person, animal, or plant lives.

“Environmental pollutant” means any solid, liquid or gaseous substance present in such quantity and concentration as may be, or tend to be, injurious to environment.

“Environmental pollution” means the presence in the environment of any environmental pollutant. Water pollution problems, air pollution problems and soil pollution problems in many parts of our country are far worse.

“Hazardous substance” means any substance or toxic substance preparation because of its quantity, concentration, or physical, chemical, physico-chemical or infectious characteristics that may cause, or significantly contribute to, an increase in mortality ; or cause an increase in serious irreversible, or incapacitating reversible, illness ; or pose a substantial present or potential hazard to human health and the environment when improperly treated, stored,transported, or disposed of, or otherwise managed. Example, Photochemical Smog that Occurred in Los Angeles in 1944. Photochemical Smog that Occurred in Delhi in November, 2016, November 7, 2017, Photo chemical and biochemical smog concentration is approximately  $710 \mu\text{g}/\text{m}^3$  (Vijayan Gurumurthy Iyer, 2021).

Climate sensitivity factor,  $\alpha$ , The inverse of the climate feedback parameter,  $\lambda$ , is the estimated climate sensitivity parameter  $0.5 \text{ }^\circ\text{C} / \text{W}/\text{m}^2$  and the energy imbalance of global warming or net radiating forcing is  $0.9 \text{ W}/\text{m}^2$ . (Figure 1).



Legend:

- p1 Spm, Rspm, Pm 10, Pm 2.5 p2 Carbon Monoxide
- p3 Nitrogen Oxide
- p4 Sulphur Dioxide, p4 Hydrocarbons, p5 Photochemical And Biological Smog.
- i Synergistic (Augmentative) Effect, Ozone

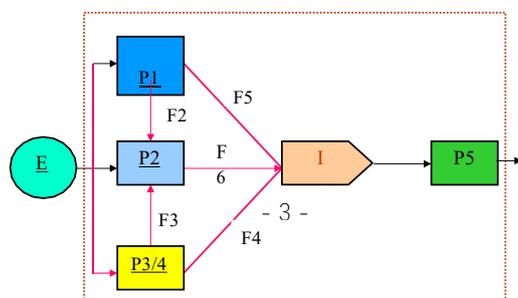


Figure 2. Climate change systems optimization and modelling diagram for assessment of environmental climate effects of photochemical and biological smog poisoning, ozone concentration of pollution, 100-150 ppm. 'e' forcing function sunlight (photo energy) temperature, humidity and air movement. p1, p2, p3, p4, p5, pn are properties state variables. f1, f2, f3, f4, f5, f6, f7, f8, Fn Are Forcing Functions Which Are Outside Mass & Energy Forces/ Sources Or Casual Forces That Drive The Systems. Interactions 'i' Where Forces And Properties Interact To Modify, Amplify Or Control Flows.

The entitled "Climate Change" means that the change in general weather conditions in an area over a long period of time or change in weather trend or change in general attitude of weather conditions such as temperature, humidity, dew point, pressure, volume, wind rose, water, air land (LAW) movement, photo chemical and biochemical smog, sunlight energy (photo energy) as shown in above figure 2.

Alternative definition of entitled "Climate Change" can be explained to long term shifts in temperature and weather patterns, mainly caused by human activities, especially the burning of fossil fuels and unsustainable infrastructural development.

Greenhouse gases (GHGs) contributes the greenhouse effect that is the tendency of atmospheric temperature to rise because GHGs absorb infrared radiation from the earth. Chlorofluorocarbons, hydrochlorofluorocarbons are aerosol propellants widely used as refrigerants and trichloro trifluoro ethylene industrial solvents damage the ozone ( a strong - smelling poisonous form of oxygen) layer in the earth's stratosphere that contains much for absorbing ultraviolet radiation. There are many such sources of the GHGs and particulate matter pollute our atmosphere that the greenhouse effect adds temperature magnitude 34 °C of warming to the surface of earth. Mathematically,  $FN = FB + FD$

It is very wide ranging on the protection of the environment including protection of air quality, archaeological heritage, historical heritage, architectural heritage, rainforest protection, and water quality in rivers, lakes, and seas and land quality.

The human population growth rates are increasing exponentially. The 'greenhouse effect' is one of the environmental problems that results either directly or indirectly from the activities of man. The role of the human population on environmental change is given in the simple equation,  $I = P \times A \times T$

Where the sustainable impact 'I' of the population on the environment results from the size of the population (P), the per capita affluence or consumption (A) and the damage caused by technologies employed to supply each unit of sustainable consumption (Vijayan Gurumurthy Iyer, 2021). The considerable proportion of the environmental degradation result from uncontrolled urbanization and industrialization for example use of commercial energy, from clearing tropical forests for agriculture to mining, extraction of fossil fuels and road infrastructures (Vijayan Gurumurthy Iyer, 2007). Sustainable Production Function and Process,  $y = f * P (X_1, X_2, X_3, X_4, \dots, X_n)$

Many resources are being depleted with little recycling and composting, and waste products and services being returned to the environment in a different form and at quantity concentrations that are toxic and damageable. Land use changes are taking place rapidly. About 70% of the global land area is taken up growing crops, grazing livestock or being utilized for extraction of mineral resources and setting up of industrial and generic estates. The remaining part of the global land area is either desert or covered with ice or is too steep for use. Forests, grasslands and wetlands are disappearing rapidly and deserts are expanding due to soil erosion and a decline in underground water deposits and lowering of water tables. The impacts (effects) of this level of stress and strain on the environment is evident in the form of climate change and the degradation in the quality of the environment from global warming,

ozone layer depletion, ocean acidification, ice melting, natural and man-made disasters and sea level rise at the global scale to river water pollution, food poisoning and urban air pollution photochemical smog at a local scale. The climate change (specifically patterns of temperature, wind rose and rainfall) occurs too rapidly for human societies, industrial and agricultural systems to adjust successfully. Our technological or engineering capabilities and demands for natural and man-made resources have grown rapidly since industrial revolution and outstripped our understanding of the impacts (effects) of changes on the environment and development. The integration of environment and development has been focused in this write-up that aims a number of environmental issues such as climate change, biodiversity, tropical forests and sustainable development.

## Results and Discussions

The results and discussions overview wearable and tearable climate and weather. Strategic environmental assessment (SEA) process can be broadly defined as a study and check of the potential impacts (effects) of a proposed project, program, plan, policy or legislative action on the environment and sustainability. SEA process is designed and developed to identify and predict the potential impacts of the physical, chemical, biological, ecological, radio-active, socio-economic, cultural environment and on human health and well-being are adequately protected. "Sustainable development" (SD) can be defined as the development which meets the needs of the present without compromising the ability and efficiency of future generations to meet their own needs. The wearable climate and weather including environmental health impact assessment and social impact assessment are fundamental modules of strategic environmental assessment (SEA) process. Significance of this research work is mainly confirmatory. SEA process is proposed for achieving sustainable environmental climate change control, ecology, and conservation that aims to incorporate environment and sustainability considerations in to organizational planning and decision-making processes, and to formulate sustainable projects, policies, plans, programs, and legislative actions. "Environmental impact assessment" (EIA) can be defined as the systematic identification and evaluation of the potential impacts (effects) of the proposed projects, plans, policies, programs, or legislative actions relative to the physical-chemical, biological, biochemical, toxicological, bio-physical, radioactive, cultural, architectural, archaeological, historical, anthropological, visual / aesthetic and socio-economic components of the total environment. The primary purpose of the EIA process is to encourage considerations of the environment, wearable climate, weather and sustainability in the organizational project planning and decision-making process and to arrive at actions that are more sustainable environmentally compatible and safe. Environmental pollution control and public health protection process should include the integrated considerations of technical or scientific/engineering, economic, environmental, social, and other factors. The most important of these considerations can be referred as "the three Es" (Engineering or technical, economics, and environment) in climate change control, ecology and conservation planning, and decision-making process (Vijayan Gurumurthy Iyer, 2022).

As the past five decades that have been characterized by the passage of legislation dealing with the environment including legislations of control of water, air, and land pollution, solid and hazardous waste management, resource conservation and recovery protection (RCR), and soil and groundwater remediation, it is necessary for Industry 4.0 impacts' (effects include source-specific, specific industrial, and generic generation or decay period) protocol for SEA process for the sustainable environmental climate change control, ecology, and conservation towards sustainable development.

The wearable and tearable Climate and Weather That Includes Environmental Pollution Prevention Safe Methods are given below (Vijayan Gurumurthy Iyer, 2007):

- ① The pollution should be prevented or reduced at the source in an environmentally safe manner whenever feasible;
- ② The Pollution that cannot be prevented or reduced should be recycled in an environmentally safe manner whenever feasible;
- ③ Pollution that cannot be prevented or reduced or recycled or composted should be

- ④ treated in an environmentally safe manner whenever feasible; and
- ⑤ Pollution that cannot be prevented or reduced or recycled or treated should be disposed or released into the environment in an environmentally safe manner and should be employed as a last resort.

The SEA treaty protocol pertains to official Government procedures that is helpful for making much earlier decisions than the EIA process. Therefore, it is a key tool for sustainable development (Vijayan Gurumurthy Iyer, 2023).

The basic principles involved to integrate environment and development are environmental inventories, environmental impact assessments and environmental impact statements that shall be discussed in subsequent training modules with case studies. A typical case study is presented. Vertical organization Chart Example.

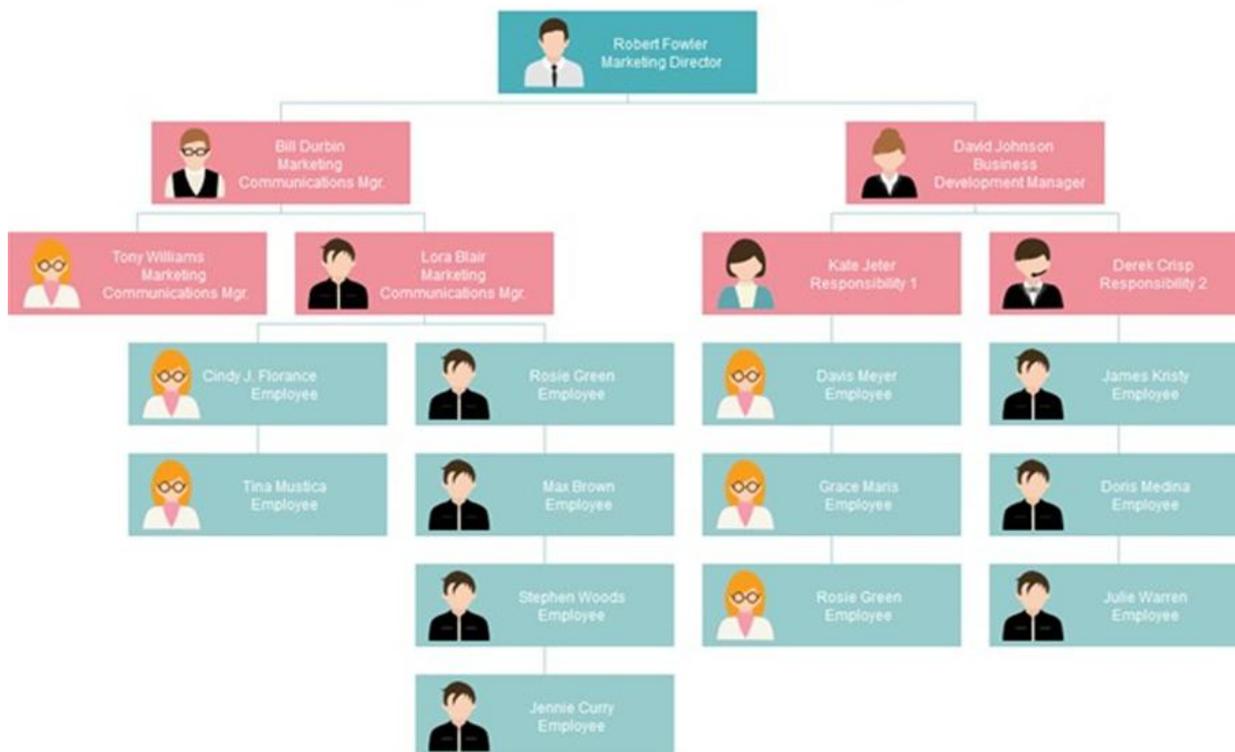
The paragraph provides wearable technology on product approach. Function based organization as the purpose or natural activity or event. Quantity whose value depends on the varying values of others. The function meaning work or operation to fulfil the purpose. Traditional organizations typically manage according to the functions in vertical organization chart given below:

In a vertical organization chart, a decision is made by the top management and descended down to employees through the hierarchy. Hierarchy system ranking people or things one above the other according to the status or importance. Employees are required to follow orders and guidance from their upper-level hierarchy in order to complete the tasks. The administrators manage the system well by simply administrating and managing the parts of organization in isolation. No interactions and interrelations of cross functional boundaries and their optimizations are understood by the employees in this system. Therefore, the managers cannot manage well by simply managing parts in isolation because the administrators do not understand psychologically the processes that cross functional boundaries align the processes towards a common vision or goal, and optimize their interactions and interrelations. In vertical organization charts, since the decision is made by the upper level and flows down to employees, collaboration can only occur on some formal occasions like a meeting. The communication in the vertical organization chart mainly occurred within departments or between sub-divisions members and managers. It can be slowed down by the rigid structures (Vijayan Gurumurthy Iyer, 2022).

Given below figure 3 shows is the vertical organization chart. The paragraph provides wearable and tearable technology on product approach. Example: Practice of awarding business on the basis of price tag alone.

Figure 3(a): Management by Objectives (MBO)

Figure 3(b): Organizational Chart for an Enterprise Resource Planning (ERP)



Create and publish to all employees a statement of the aims and purposes of the organization. The management must demonstrate constantly their commitment to this statement.

Employees can make a decision by themselves for daily operation and only have to ask for instructions when it comes to very important issues. In most cases, staffers are not driven by their managers' command, but instead the company's goal. In horizontal organization chart, employees have rights to make decision during the daily operation, therefore, collaboration tends to happen more organically due to cross functional boundary interactions and interrelations. Employees are more accessible to an acquaintance (a person know slightly, makeaware of, knowledge or familiarity) in order to produce collaborative and teamwork solutions.

The communication in the horizontal organization chart mainly occurred cross functional boundary interaction and interrelation departments / interdivisional or between sub-divisions members and managers. It can be easier to flow down from one department to another.

The process managers manage well by managing parts in isolation because the administrators do understand psychologically the principles of processes that parts cross functional boundaries align the processes towards a common vision or goal, and optimize their interactions and interrelations (Vijayan Gurusurthy Iyer, 2021).

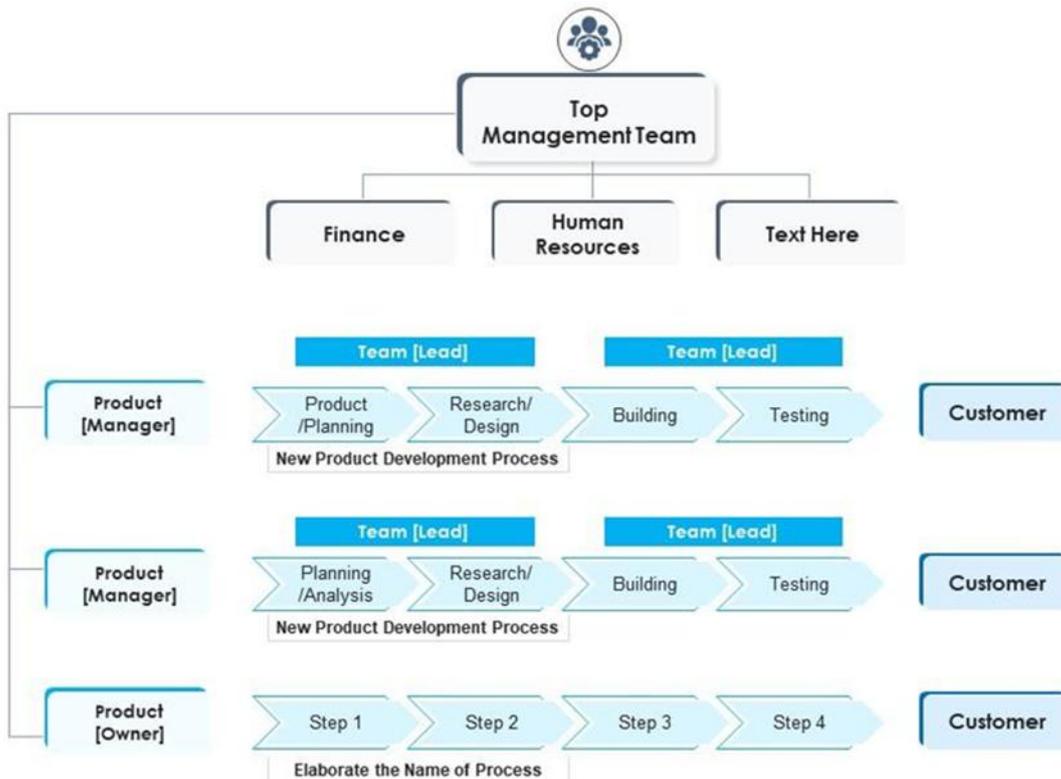
Horizontal organization Chart Example.  
Management By Process (MBP)

Ending the practice of awarding business on the basis of price tag alone. Understanding the system of profound (very great) knowledge.

Elimination of Management by Objective (MBO).

Continuously learning capabilities of processes and improvement them. Given Below Figure 4 Depicts the Horizontal Organization Structure Chart (HOC) or Process Flow Chart or Cross Functional Chart is An Example:

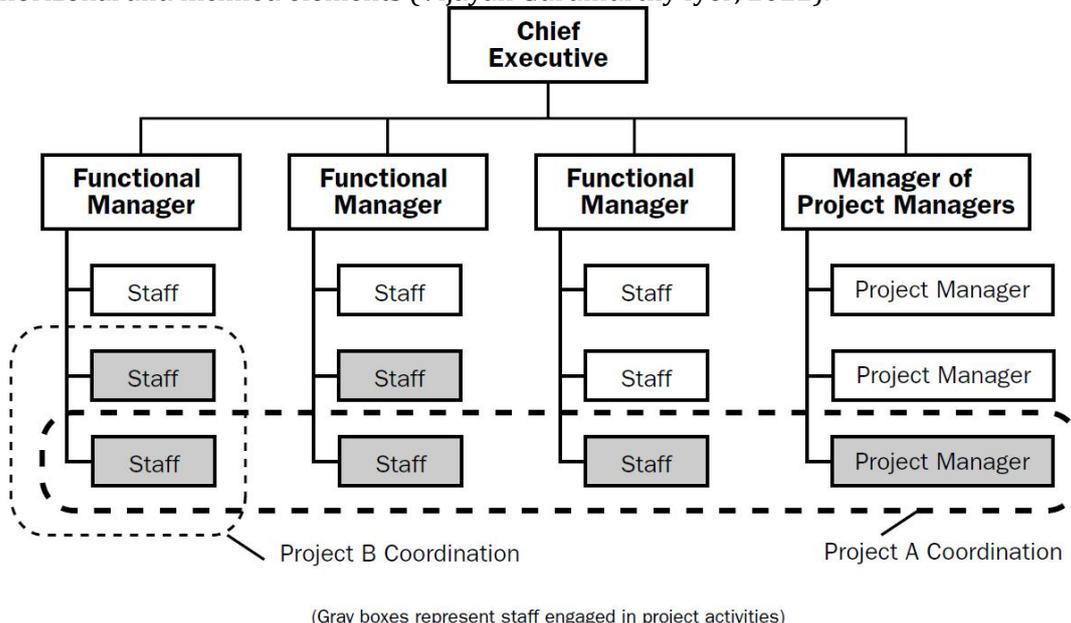
The paragraph provides wearable and tearble technology on process approach.



**Hybrid Organization Chart:**

The paragraph provides wearable and tearable technology on product approach. (Vijayan Gurumurthy Iyer, 2024).

The combination of the above vertical organization management chart and horizontal organization management chart that are called combined such that the organizational management chart is called hybrid organization management chart or Matrix organizational chart. The organizational works functional like an isolated part (vertical organization function chart) and cross functional boundary to understand for interrelations and interactions optimization and learning the capabilities of processes and how to improve processes to remove barriers that rob people of pride of workmanship. The environment in which chart is developed like a matrix grid model. A grid - like array of elements vertical, horizontal and inclined elements (Vijayan Gurumurthy Iyer, 2022).



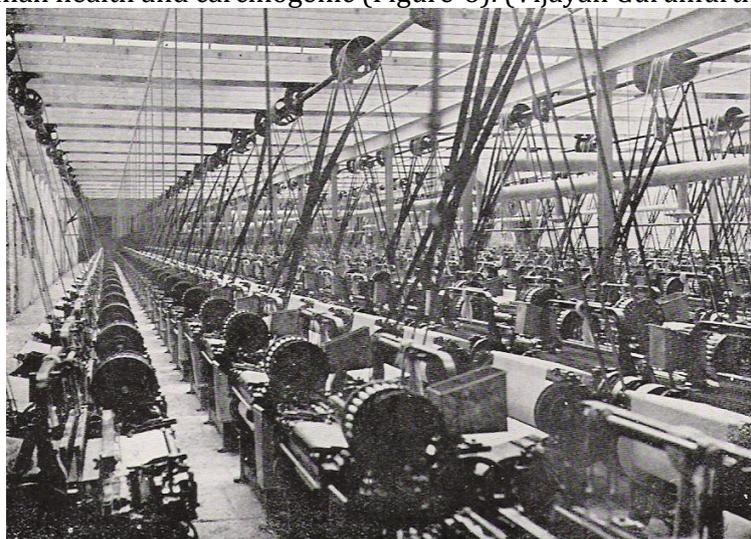
Hybrid Management Organizational Flow Chart is Depicted in the Above Figure 5. Management By Objectives and Process (MBOP); The paragraph provides wearable and tearable technology on product and process approach.

### Conclusions and Recommendations

The case study and check provide the effect of wearable climate and weather on wearable technology.

Further case study and check provides Environmental Pollution Preventer Mechanism/ Functional and Cross Functional Management:

The wearable and tearable technology in Indian cotton roller ginning plant is an example cited for wearable climate and weather (Iyer Vijayan Gurumurthy, 2007). This case study discusses the contamination and pollution caused by wearable and tearable chrome composite leather-clad (CCLC) rollers commonly used in cotton roller ginning mills and suggests an alternative roller material. CCLC rollers contain about 18,000 to 36,000 mg/kg (ppm) total chromium in trivalent and hexavalent forms, which are toxic to human health and carcinogenic (Figure-6). (Vijayan Gurumurthy Iyer, 2007).



**FIGURE 6: UNSAFE CHROMIUM COMPOSITE LEATHER CLAD ROLLERS COMMONLY**

When seed-cotton is processed in double roller (DR) ginning machines, the lint is contaminated with

wearable and tearable chromium particles that are carried into the spun yarns and cotton by-products (Vijayan Gurumurthy Iyer, 2007). Specifically, due to persistent rubbing of the leather-clad roller over the stationary knife during the ginning process, the lint is contaminated with about 140 to 1,990 ppm of chromium, and the spun yarns and cotton by-products contain about 100 to 200 ppm, far in excess of the standard limit of 0.1 ppm. Gin and mill workers are directly exposed to this wearable and tearable carcinogenic substance. To offset this problem, pollution-free rubberized cotton fabric (RCF) rollers have been fabricated and tested roller gins. The RCF roller covering is made of multiple layers of fabric bonded together using a white rubber compound, which has a surface finish conducive to high ginning efficiency. This eliminates chromium contamination and pollution during the ginning process. On the basis of the design and development of various test rollers and subsequent evaluation studies, the performance of pollution-free RCF rollers has been demonstrated with reference to their commercial benefit and eco-friendliness in cotton ginning mills. Since semi-finished chrome leather washers, which contain 3% to 4% chromium, are being used by roller ginning mills in India, Africa, Tanzania, China, and Egypt, attention has been drawn to the contaminating and polluting aspects of the process (Figure 7). Figure 7 represents wearable and tearable technology used in Indian Cotton Roller Ginning Factories contaminate lint cotton.



**FIGURE 7: FINISHED ROLLER IS READY FOR GROOVING OPERATION USING A BAND SAW**

This research is an attempt to eliminate the contamination of wearable and tearable cotton and its products, air pollution in cotton ginning mills, and other ginning problems at the source through the design and development of an eco-friendly, pollution-free chrome less roller (Vijayan Gurumurthy Iyer, 2024). RCF rollers have been used successfully by U.S. gin machinery manufacturers for more than 30 years. Nevertheless, current roller gins manufactured by Indian and foreign companies commonly incorporate wearable and tearable CCLC materials (Figure 7) (Vijayan Gurumurthy Iyer, 2007).

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