knowledge14
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Lab Guide

Problem Management: Structured Problem Analysis With Kepner-Tregoe

Shellina Damji & Barry Brooks

Lab instance: https://<<name>>.lab.service-now.com

Login / Passwords:

admin / Knowledge14

itil / Knowledge14

employee / Knowledge14

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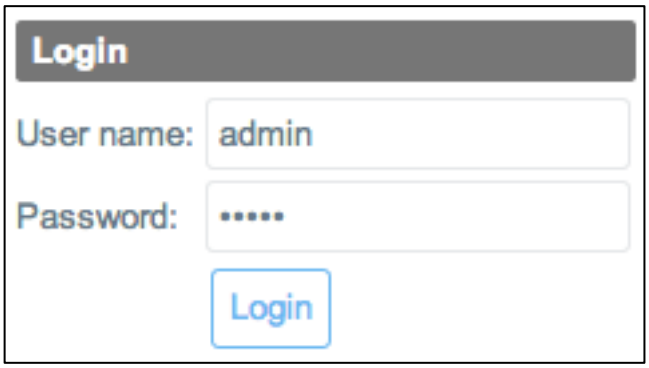
Lab Goal

This lab walks you through the Problem we will be using for this session. In this initial lab, try to find the root cause for this problem using limited knowledge & no structured approach to problem solving.

Lab 1
Solve
Problem

Log on to Your Training Instance.

1. Login to the instance URL on the cover page using the provided **admin** credentials.

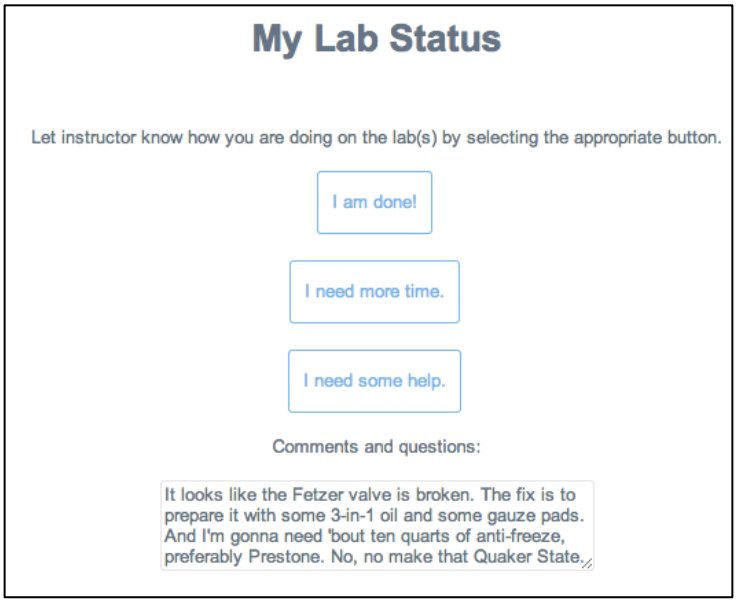


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Review Problem & Propose Solution.

1. The example problem is located in the back of this guide. Take 10 minutes & work individually or in small groups. Read through the content & propose a solution. Again, this initial lab is intended to give you a baseline before being introduced to KT.

2. Navigate to **Lab Management -> Report Lab Progress** & drop in your best guess at the problem w/ solution & your name. Click **I am Done!**



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Lab 2 Solve Problem Using KT

Lab Goal

Structured problem analysis provides a rational methodology for investigating the cause of a problem or incident. This problem solving methodology was developed by Kepner-Tregoe to help problem managers avoid making wrong decisions based on subjective opinions. **This lab walks you through the Structured Problem Analysis application that lets you track the problem analysis process through ServiceNow.**

Appraise the Situation

1. Create a new Incident & save the record.
2. Navigate to the bottom of the form & locate the Situation Appraisal.
3. Based on the problem use case, appraise the situation.
4. Continue to the next page to see an example.

Situation Appraisal ←
- Identify Concerns
- Set Priority
- Plan Next Steps
- Plan Involvement

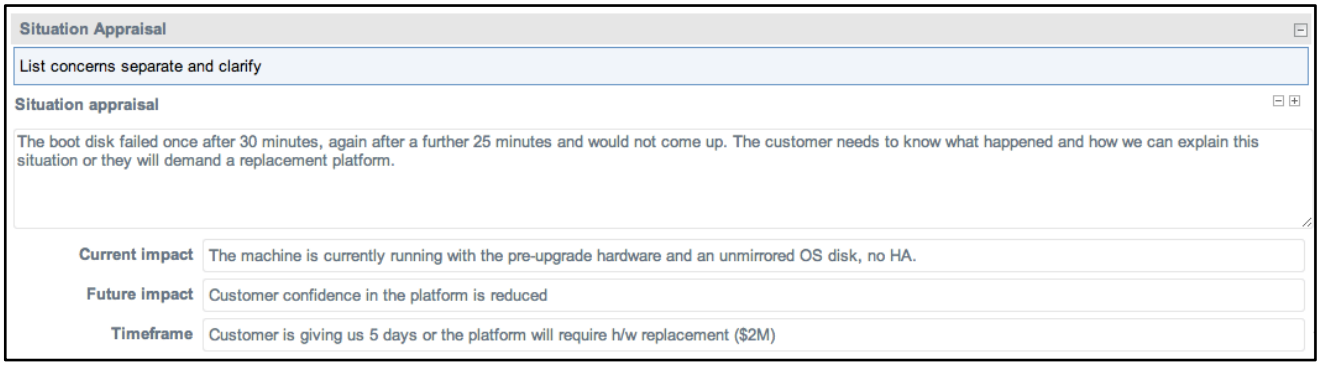
Problem Analysis
- Describe problem
- Identify Possible Causes
- Evaluate Possible Causes
- Confirm True Cause

Think beyond the fix



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Appraise the Situation, cont.



Field	Description
Situation appraisal	A brief statement of the situation.
Current impact	The current impact of the situation.
Future impact	Any anticipated future consequences of the situation.
Timeframe	Any time constraints and deadlines.

NOTE: Appraisals should help you determine which records to use KT against!

Situation Appraisal
- Identify Concerns ←
- Set Priority ←
- Plan Next Steps ←
- Plan Involvement ←

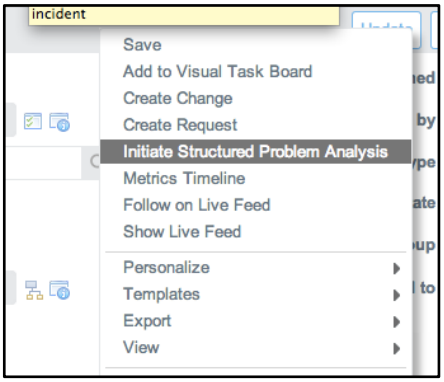
Problem Analysis
- Describe problem
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- Evaluate Possible Causes
- Confirm True Cause

Think beyond the fix

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Initiate a Problem Analysis

1. Save your new Incident.
2. Navigate to the top of the form & right-click the header bar. Select **Initiate Structured Problem Analysis.**

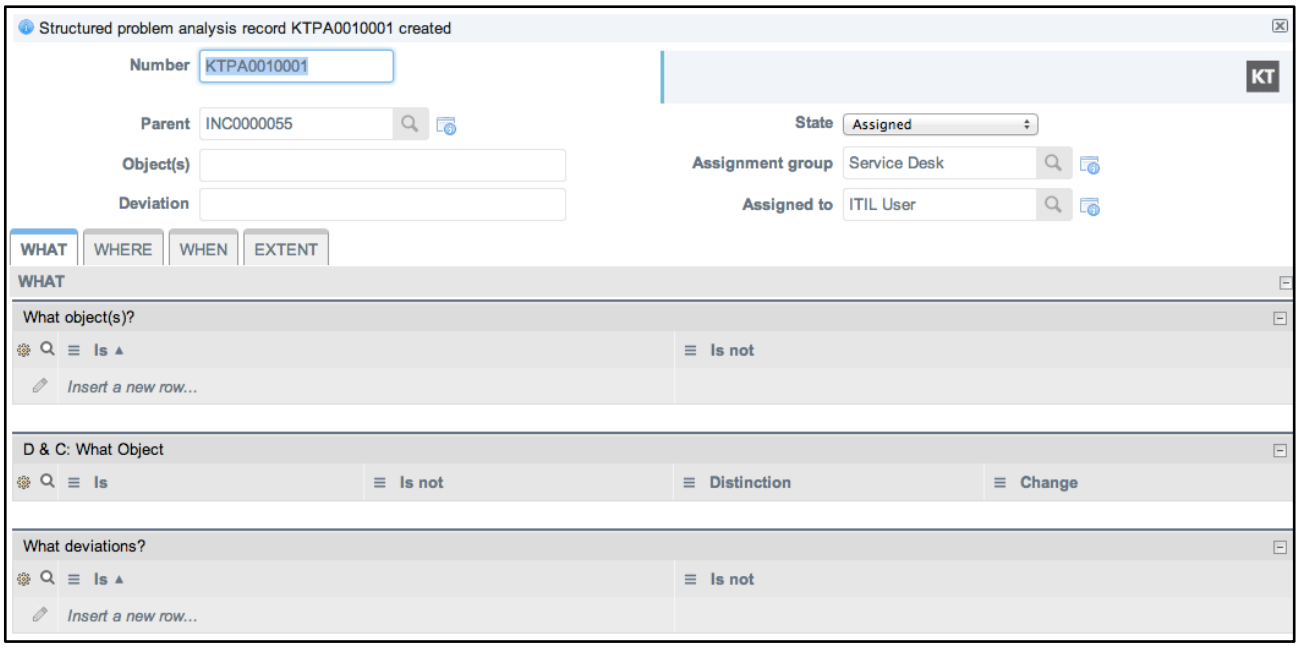


Situation Appraisal
- Identify Concerns
- Set Priority
- Plan Next Steps
- Plan Involvement

Problem Analysis ←
- Describe problem
- Identify Possible Causes
- Evaluate Possible Causes
- Confirm True Cause

Think beyond the fix

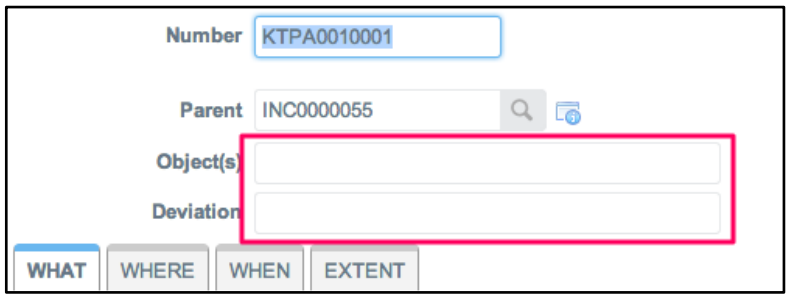
This will create a new Problem Analysis & link it to the Incident.



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Starting the Problem Analysis.

1. Based on the problem use case, fill in the Object & Deviation.



Situation Appraisal
- Identify Concerns
- Set Priority
- Plan Next Steps
- Plan Involvement

Problem Analysis ←
- Describe problem
- Identify Possible Causes
- Evaluate Possible Causes
- Confirm True Cause

Think beyond the fix

Field	Description
Number	An automatically-generated record ID.
Parent	The number of the problem or incident record from which the problem analysis record was created.
State	The current stage of the problem analysis. The state can be **Assigned**, **Work in Progress**, **Think Beyond the Fix**, **Closed**, or **Cancelled**.
Assigned group	The group assigned to work on this problem.
Assigned to	The problem manager assigned to work on this problem.
Object(s)	A text description of the object or objects affected. Forms part of the problem statement.
Deviation	The difference between the expected performance and the actual performance. Forms part of the problem statement.
WHAT, WHERE, WHEN, EXTENT	What the problem is and what it is not, where it occurs, when it occurs, and the extent of the occurrence. This information is all defined later in the process, as part of specifying the problem.

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Describe the Problem. (What, Where, When & Why)

Specify the problem details by entering values that are definitely true (*Is*) & values that could be true but are not (*Is not*) for:

- *What* the problem is & what it is not.
- *Where* the problem occurs & where it does not.
- *When* the problem occurs & when it does not.
- *Extent* to which the problem occurs & the extent to which it does not.

Situation Appraisal
- Identify Concerns
- Set Priority
- Plan Next Steps
- Plan Involvement

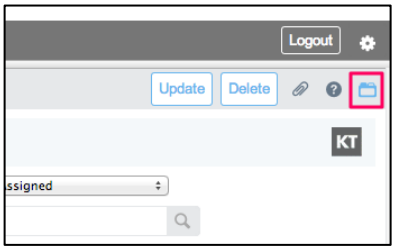
Problem Analysis
- Describe problem ←
- Identify Possible Causes
- Evaluate Possible Causes
- Confirm True Cause

Think beyond the fix

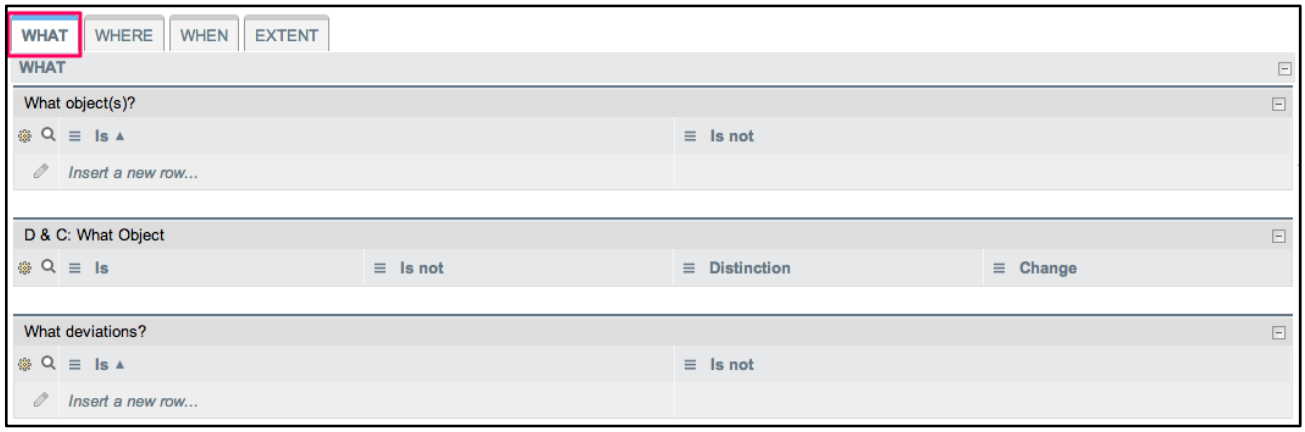
For each *is*, an equivalent *is not* question should be posed, although it may not always be answerable. These two columns aid in eliminating intuitive but incorrect assumptions about the problem.

NOTE: To add these values, double-click **Insert a new row...** on the appropriate embedded list.

NOTE: Consolidate all the tabs on a form by selecting the tab icon located on the upper right.



1. Navigate to **WHAT**.



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Based on the *problem use case*, fill in the **What** sections. Refer to the sections below for help.

Field	Description
What object(s)?	The objects that the problem affects.
D & C: What Object	Shows the information entered when listing Distinctions and Changes for the WHAT area.
What deviations?	The deviations from expected behavior.

2. Navigate to **WHERE**.

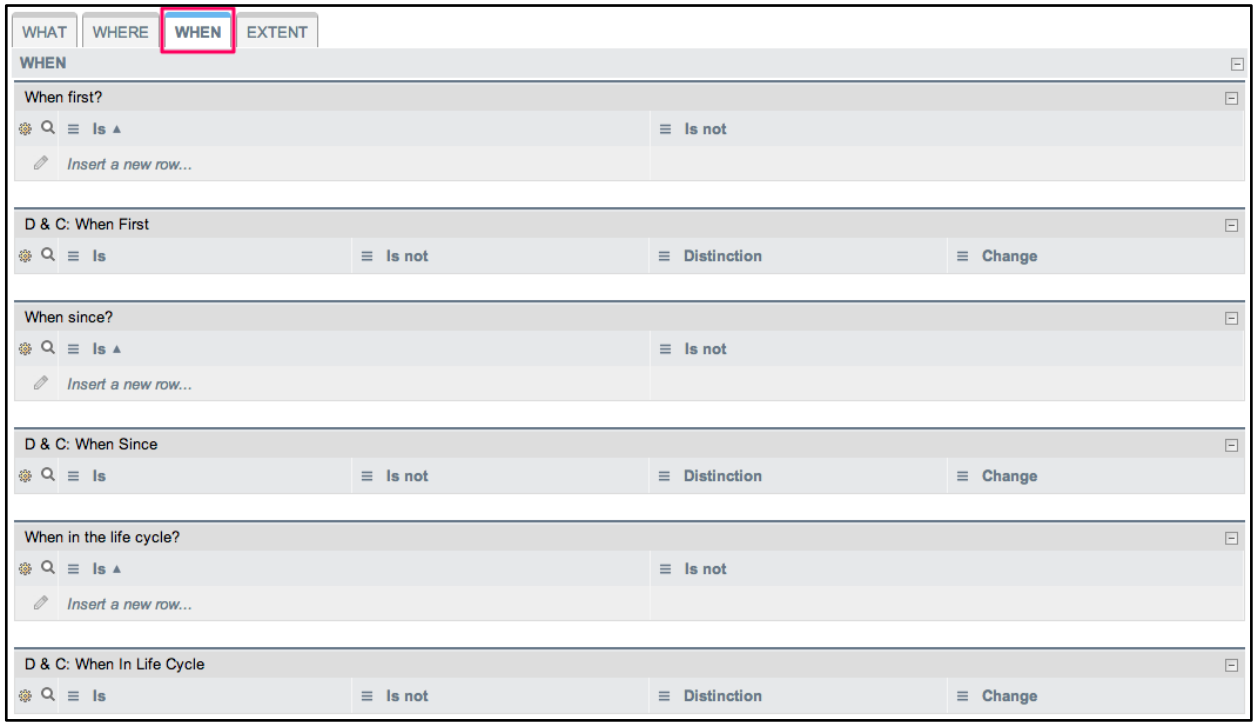


3. Based on the *problem use case*, fill in the **Where** sections. Refer to the sections below for help.

Field	Description
Where geographically	The location where the problem is occurring.
D & C: Where Geographically	Shows the information entered when listing Distinctions and Changes for the WHERE area.
Where on the object	The part and location within the relevant object.

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4. Navigate to **WHEN**.



5. Based on the *problem use case*, fill in the **When** sections. Refer to the sections below for help.

Field	Description
When first?	When was the problem first observed?
D & C: When First	Shows the information entered when listing Distinctions and Changes for the WHEN area.
When since?	When since the first observation has the problem been observed?
D & C: When Since	Shows the information entered when listing Distinctions and Changes for the WHEN area.
When in the life cycle?	When in the standard operational activities of the object does the problem occur?

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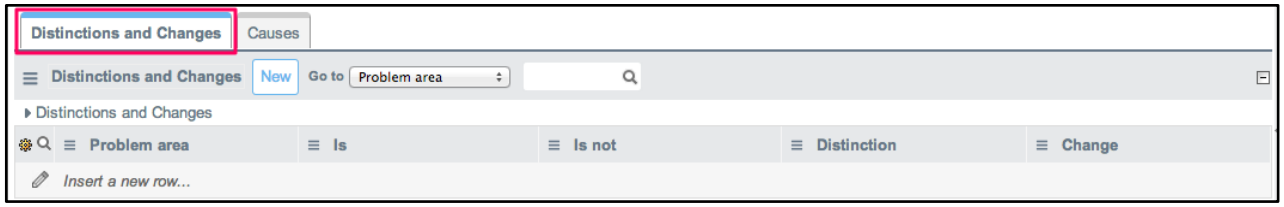
6. Navigate to **EXTENT**.



7. Based on the *problem use case*, fill in the **Extent** sections. Refer to the sections below for help.

Field	Description
How many objects?	The number of objects affected.
What is the size?	The magnitude of the problem. Is it localized or widespread?
How many deviations?	The quantity or frequency of the deviations.
What is the trend?	The problem's potential for growth or shrinkage over time.

8. Navigate back to **What** & locate **Distinctions & Changes** in the bottom of the form.



Define distinctions & changes for each *Is* & *Is not* pair previously defined in the **WHAT**, **WHERE**, & **WHEN** sections. This information helps problem managers to focus on recent changes that may have caused the problem.

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Identify Possible Causes

Situation Appraisal
Identify Concerns
Set Priority
Plan Next Steps
Plan Involvement
Problem Analysis
Describe problem
Identify Possible Causes
Evaluate Possible Causes
Confirm True Cause
Think beyond the fix

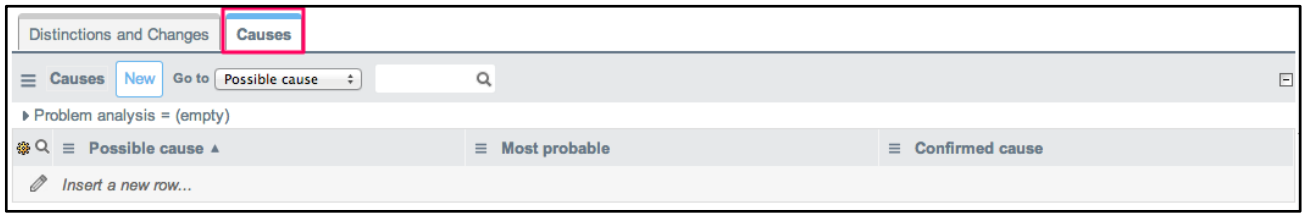
After defining the problem, you should be able to find the actual confirmed cause by:

- Listing all possible causes.
- Evaluating each possible cause to find the most probable causes.
- Testing the most probable causes.
- Confirming the cause.

You may identify several causes as most probable & may confirm several causes by the end of the process.

NOTE: To add these values, double-click **Insert a new row...** on the appropriate embedded list.

9. Navigate to **CAUSES** at the bottom of the form.



Based on the *problem use case*, fill in all the **Possible Causes**.

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Evaluate Possible Causes

Situation Appraisal
Identify Concerns
Set Priority
Plan Next Steps
Plan Involvement
Problem Analysis
Describe problem
Identify Possible Causes
Evaluate Possible Causes
Confirm True Cause
Think beyond the fix

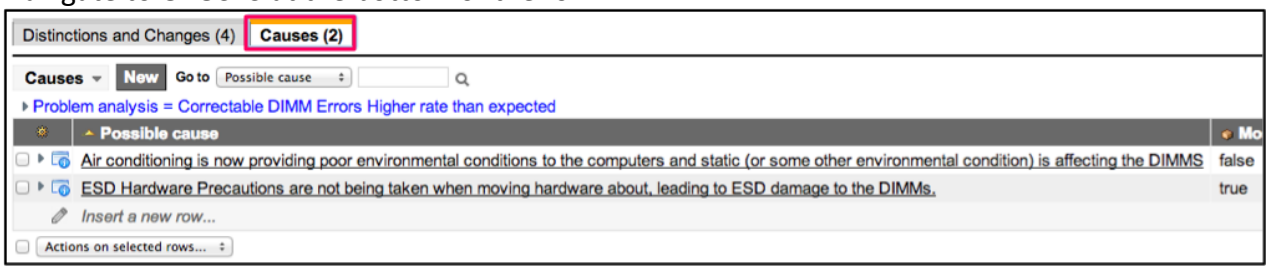
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You may identify several causes as most probable & may confirm several causes by the end of the process.

NOTE: To add these values, double-click **Insert a new row...** on the appropriate embedded list.

10. Navigate to **CAUSES** at the bottom of the form.



Based on the *problem use case*, Evaluate all the **Possible Causes**.

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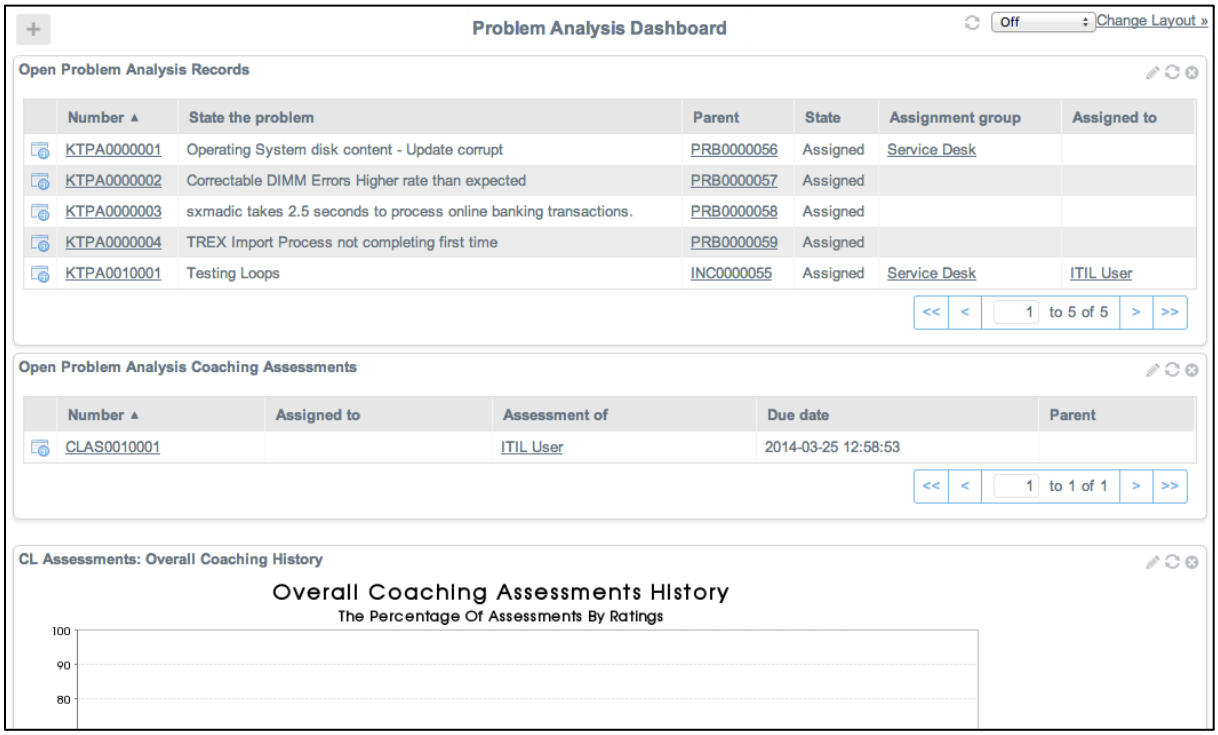
Review Dashboard

The problem analysis dashboard gives problem manages a high-level view of ongoing problem analysis work, including:

- Open problem analysis records (records where the state is not **Closed** or **Cancelled**).
- Open problem analysis coaching assessment records associated with structured problem analysis.

1. Navigate to Structured Problem Analysis > Problem Analysis Dashboard.

2. Review the information & click any entry to examine it in further detail.



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Request a Coaching Assessment

The coaching loops feature enables a *coach* to monitor a specific behavior in an individual or group, the *coachee*, & provide timely feedback so that the coachee can do a better job the next time.

Coaching loops can be applied to any task-based process in ServiceNow, such as incident management, problem management, & change management. It can be applied to non-task or custom tables as well if the administrator configures a business rule.

The coaching loops feature was release with the Berlin release.

ServiceNow evaluates coaching opportunities against coaching disciplines to generate coaching assessments. When coachees work through a process, such as structured problem management, they perform activities that may be defined as coaching opportunities.

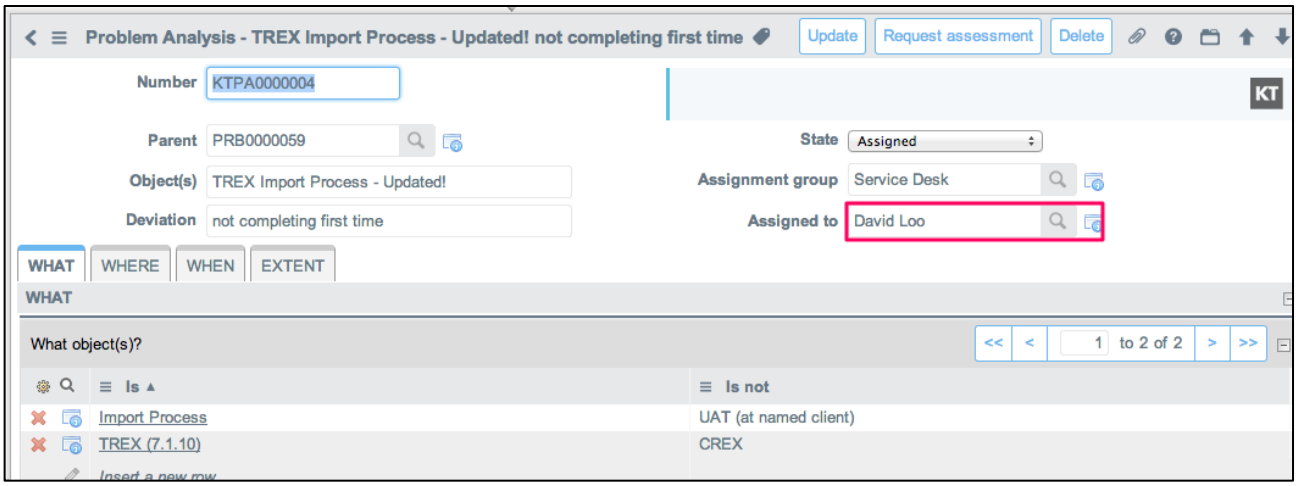
Several criteria must be met to generate a coaching assessment:

- A coaching discipline & a coaching opportunity must exist for the same table.
- A single user action, such as updating a problem or changing a problem description, must satisfy the conditions defined on both the discipline & opportunity records.
- The **Coachee** on the Opportunity record must be a member of the **Coachee group** on the discipline record.

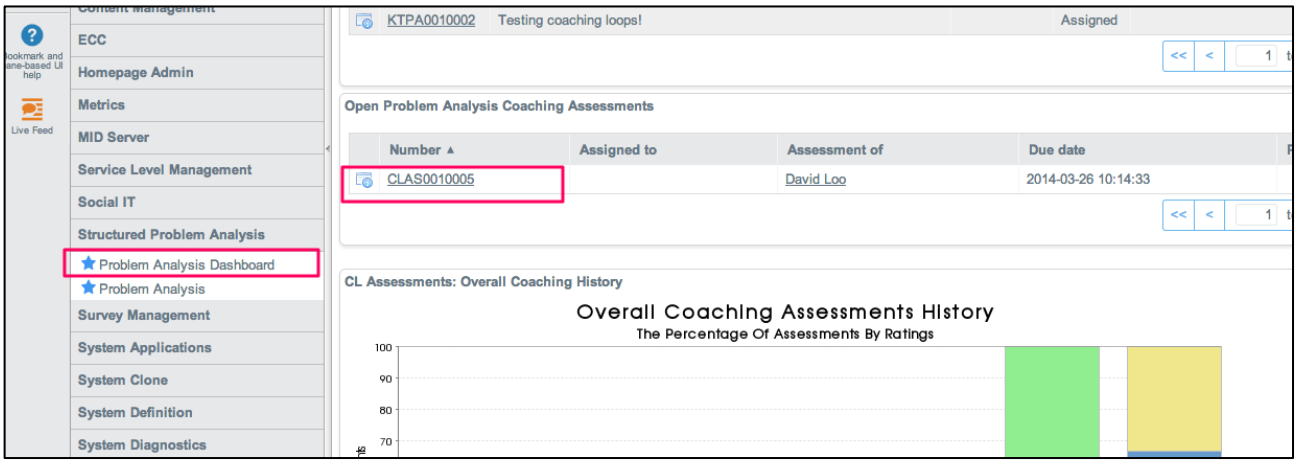
When a coaching discipline & coaching opportunity pair meets these criteria, ServiceNow creates an assessment record for the coachee & assigns it to the coaching group. For this lab, we've made it easy to generate a coaching assessment: Simply assign any Problem Analysis to David Loo.

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1. Assign any **Problem Analysis** to **David Loo**. This will generate a coaching assessment we can use for the next example



2. Navigate to the **Problem Analysis Dashboard**. Select any coaching assessment.

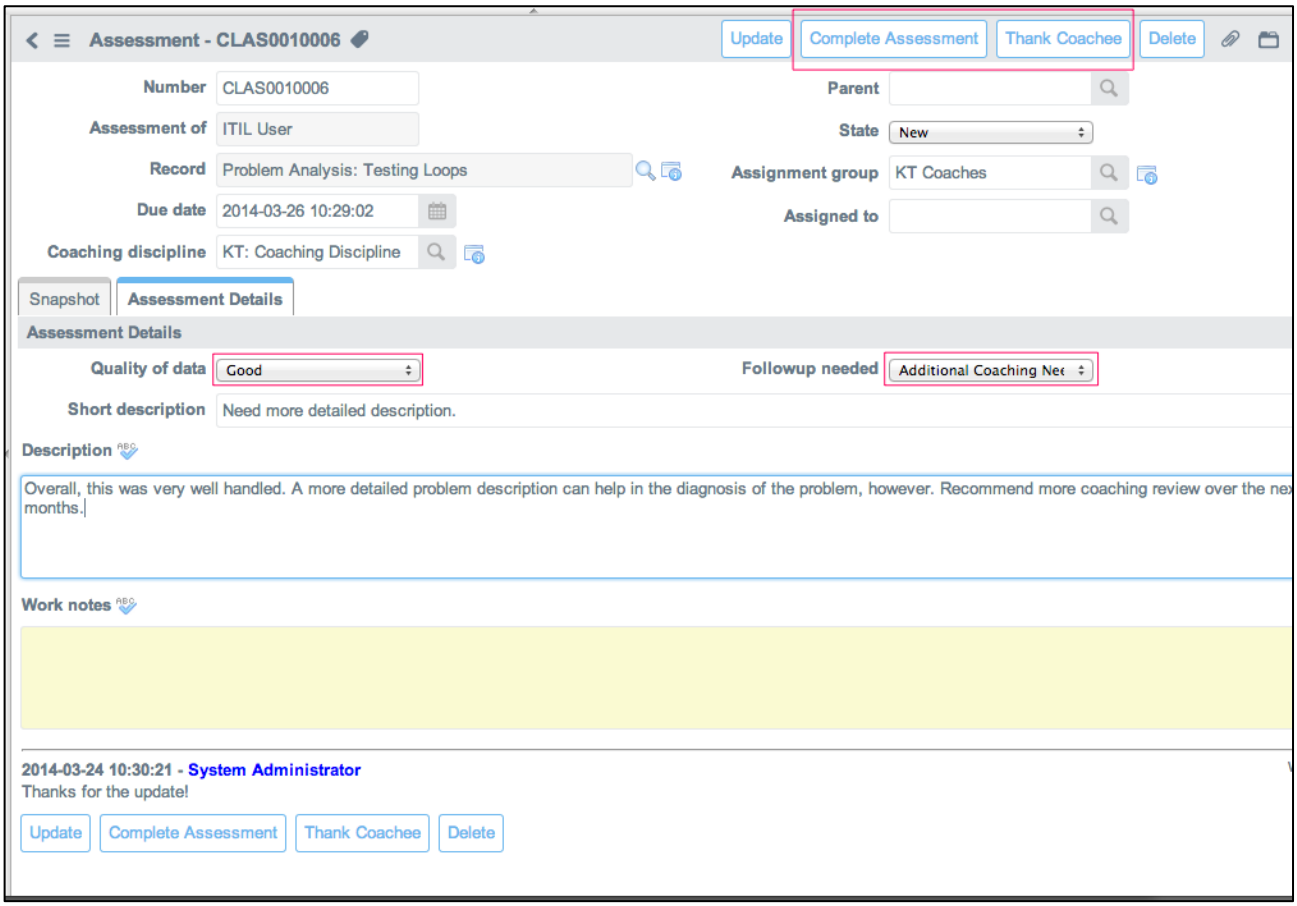


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Assessments are task-based records assigned to a coaching group. The record allows coaches to give feedback to coachees. The **Quality of data** field offers a simple scoring system of the coachee's performance. A coachee can view any field on the assessment form.

Review the assessment & notice the scoring elements as well as the capability to thank the coachee (which is a notification event).

3. Add some detail, including a score & click Complete Assessment.



4. Navigate back to Structured Problem Analysis > Problem Analysis Dashboard. Review the updated results.

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Kepner-Tregoe Problem Example



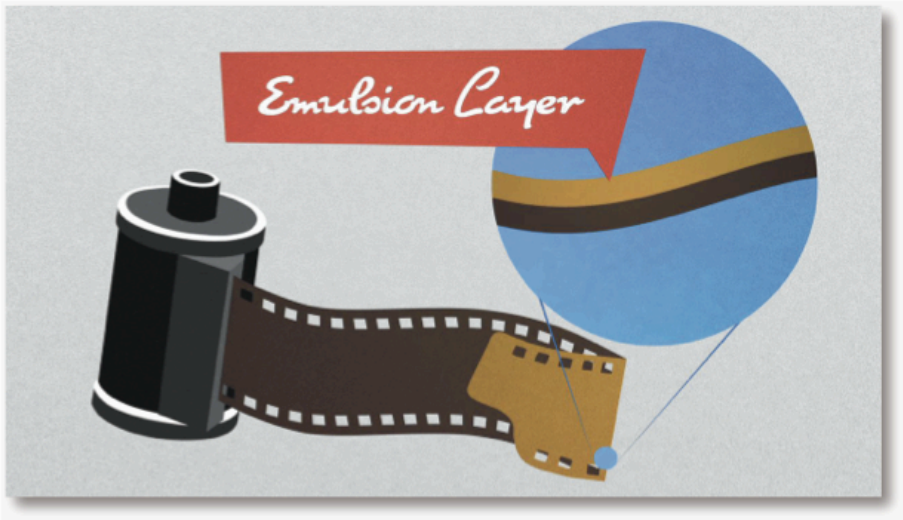
Tamworth Petrochemical Company was a preeminent manufacturer of film. One type of film in particular, Hi-Grade 202, suffers from persistent fogging. Complaints are mounting and Tamworth needs to find the cause of fogging film.

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Today, with most pictures captured and stored digitally, it may be difficult to imagine working with the photochemical methods of photographic film. So, let's take a step back from today's technological triumphs and brush up on some photochemical processes.

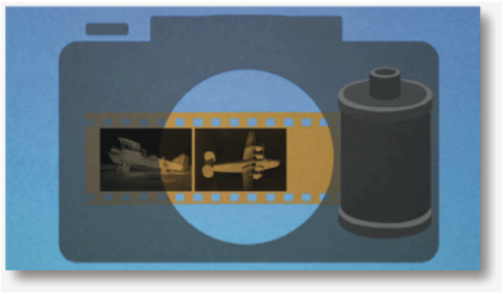
In the 1950s, photography was synonymous with patience and process. Pictures were captured on chemical coated plastic called 'film.' Film's secret was found on a single side, coated with layers of transparent, light-sensitive chemicals. Film's secret was called the emulsion layer and it was, truly, a fickle secret. Light was both its main ingredient and greatest corruptor. Too much and the photo was ruined. Too little and the photo was indecipherable.

This emulsion layer needed light for exposure, but just the right amount. The camera's shutter, in the moment of capture, allowed this precise timing of light inside the film's dark chamber. Even unseen fragments of light could destroy the integrity of the developed photograph, causing irreparable spots, streaks, and the nuisance known simply as "fog." The need to protect film gave manufacturers, like Tamworth, the incentive to be vigilant in producing packaging that could not be penetrated by light.



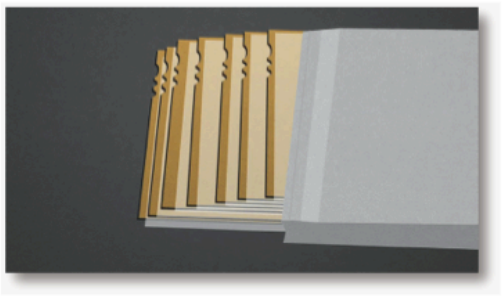
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Roll Film



Perhaps the most common film of its era, roll film was a hobbyist's best friend. Roll film was one long, continuous strip, housed in a light-tight container. The roll film performed as advertised, rolling through the light-tight camera, frame by frame. Each frame was exposed via the camera's shutter and progressed forward into welcome darkness. At the end of the roll, the film was rewound back into its container, where it was then ready for processing.

Sheet Film



The technique for using sheet film, which was handled predominantly by professional photographers, was highly specialized. To maintain its integrity, sheet film was only handled in total darkness. The photographer would remove the sheet from a cradle of interleaf paper, which prevented the sheets from sticking together. From there, the film was directly inserted into light-tight holders, and then traveled as a package into the camera. Once the holder was inserted into the back of a camera, the photographer removed a cover panel from in front of the film so that it could be exposed to light when the camera's shutter was 'clicked.' This process captured the image on the film, and then the cover panel was reinserted. From there, the sheet film was safe in the light-tight holder for

Film-Pack



And, finally, the unique film of its time, film-pack, provided consumers with distinctive construction, low price-point, durable packaging, and remarkable portability. Film pack's tortoise-like shell kept light out. Via a large pull-tab, a thin sheet of protective paper could be removed, frame by frame, which readied the film for exposure. Once all the frames of the film pack were exhausted, the entire pack could be removed from the camera and handed off to processing.

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The case you're about to review takes place at Tamworth, a preeminent manufacturer of film at the time.

One type of film in particular, Hi-Grade 202, was the thorn in Tamworth's side; its persistent fogging ended up causing more than just its share of bad photos.



See the difference? Doesn't take a discerning eye.

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Tamworth Petrochemical Company acquired Hi-Grade Photo Products seven months ago. Hi-Grade makes several types of film. Hi-Grade 202 is a high-quality, supersensitive emulsion. It is marketed nationally in roll form for amateurs and sheet and film-pack forms for professionals.

Roll film is similar to most film commonly used by the general public. Sheet film is handled in total darkness, negatives being withdrawn from between interleaf papers by the photographer and inserted into a light-tight holder which is then placed in the camera. Film-pack is a self-contained unit ready to be installed in the camera. The photographer merely pulls a paper tab to shift the exposed negative out of position and a new one into position.

The procedure for using and developing the film has not changed since its introduction. Hi-Grade 202 is produced in small lots at the Denver plant. After packaging, the film is shipped to dealers across the country for display and sale. A remarkably stable film with a shelf life of 18 months, "Hi-Grade 202" has an excellent reputation in the trade.

During the last 48 hours, Sales, Manufacturing, and Research have been working to resolve this sudden and serious problem with the "Hi-Grade 202" film. Customer and dealer complaints about fogged sheet film are mounting. This crisis now requires immediate action. Otherwise, the only choice will be to remove "Hi-Grade 202" from the market.

During the past ten days, dealers in several sales districts have had customers complain of fogged sheet film. In some cases, dealers have accumulated complaints for several days before they reported them. Complaints, mounting every day, have since spread to all sales districts in the country. Right now there are complaints from 682 of our 7,000 dealers. Although Sales is replacing a box of fogged film with two new boxes, this has not placated anyone. Two commercial studios, for example, threaten total cancellation of further use of our products because our film, which they used to photograph unique events, was fogged and the pictures consequently ruined.

Sales has been very concerned by several manufacturing problems which have resulted in failure to meet delivery requirements. For example: a serious fire two months ago in the "Hi-Grade 202" Film Emulsion Department resulted in the discharge of several employees for carelessness and the training of new emulsion mixers; delivery difficulties with the interleaf paper for over a month after the acquisition; delay in the arrival of new bulk storage containers for raw ingredients. Though the delivery difficulties with the interleaf paper cleared up by acquiring a new supplier, all of the new bulk storage containers have not yet arrived and so the old ones are still being used.

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Sales of sheet film, as well as film-pack, have quickly dropped and some professionals have begun using competitive brands. So far, replacing the fogged film and Hi-Grade's good reputation have kept most dealers from defecting.

Sales found that all "Hi-Grade 202" film is shipped, distributed, stocked, and sold by dealers the same way. They also found that complaints are coming from small outlets where turnover is slow, but expect to hear complaints from the large outlets soon. None of the film was outdated and the fogging was seen as soon as it was developed rather than later.

Sales asks that we stop production for a couple of days until Manufacturing thoroughly checks out their operation (i.e., effects of the fire, effectiveness of emulsion mixer training, possible contamination by the new storage containers). The expense involved in doing this would be about $30,000.

Manufacturing believes the new zip-top sheet film package is responsible. Because of substantial customer complaints that our package was unattractive and hard to open, Sales rushed the introduction of the more attractive, easier-to-open zip-top package five weeks ago. This did not give us time for thorough testing. The problem started since then. Manufacturing recommends going back to the former package. It was used for three years without difficulty. This will give us time to further investigate the zip-top package. Manufacturing urges an immediate hold on expansion of the zip-top features to other "Hi-Grade 202" film. This proposal would require a commitment of only $20,000. However, it could invite an added source of known customer dissatisfaction at this critical time. Research has conducted tests on samples returned. Their findings are attached.

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To: B. Wheeler

From: J.B. Strom, Research Director

Subject: Summary of Lab Tests on Fogged Film and Recommendations

We have studied the samples of returned fogged film provided by Sales and have attempted to reproduce the fogging exactly as it appears on the returns.

We analyzed 50 returned boxes of film and found two things they all had in common: all negatives in a box are fogged; fogging is even across the entire surface of each negative.

We then took 36 samples of good sheet film from the plant warehouse and carefully subjected these to a variety of tests. The only way we were able to reproduce exactly the unique fogging effect was to expose the sheet film to a source of radiation (such as an X-ray machine).

Recognizing that this type of film is supersensitive and thus more susceptible to contamination, and having clearly demonstrated that radiation produces the exact characteristics of the returned fogged film, we believe that a source of radioactivity is the root of the problem.

We know that radioactive fallout has contaminated various products in the past. With the current high incidence of Strontium 90, it is entirely possible that radioactive fallout is responsible for the fogging. At the same time, it is certainly possible that proximity to X-ray machines in use, or to other sources of radiation, is responsible for the fogging.

We propose an emergency budget of $45,000 be set aside for an immediate study to:

- locate sources of radioactivity in the plant, in our field warehouses, and throughout the distribution pipeline;
- run an analysis to determine whether there is a correlation between the incidence of radioactive fallout in a specific area and the number of complaining dealers and their customers in that area.

It is likely that we will locate the source of radioactive contamination before this amount is expended. A problem of this magnitude, and it appears to be growing rapidly, requires and warrants thorough and penetrating action of this nature.

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